



Solvay USA Inc.
Houston Plant

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Steve
Thompson
T 079 wln

CERTIFIED MAIL: Return Receipt Requested (7008 0150 0001 2472 2999)

RECEIVE

October 3, 2013

OCT 22 2013

Mr. Jeff Robinson
Chief, Air Permits Section (6PD-R)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Air/Toxics & Inspection
Coordination Branch
6EN-A

Re: Solvay Benzene NESHAP, Subpart FF, Quarterly Report
July 1, 2013 to September 30, 2013
EPA ID No.: TXD008099079

Dear Mr. Robinson:

Solvay USA Inc. formally Rhodia Inc., in Houston, Texas owns and operates a Sulfuric Acid Regeneration Plant. In addition to the regeneration of sulfuric acid, the plant incinerates hazardous waste, under the conditions of the facility's RCRA Part B Permit (HW-50095).

Solvay receives benzene waste streams from offsite customers to use as fuel in the Sulfuric Acid Regeneration Unit No. 2 (SARU) industrial furnace which is permitted under 40 CFR 266 Subpart H. Thus, the SARU industrial furnace is a treatment process for the waste and are exempt from testing and monitoring per 40 CFR 61.348(d)(1) and 61.354(a). The benzene waste streams may be stored in one or more of six treatment services (TS) storage tanks prior to treatment. The tanks are vented to the SARU industrial furnace for vapor control per 40 CFR 61.343(a). The TS Vapor Combustor provides backup vapor control for the six TS tanks. The site has no oil-water separators or individual drain systems used to convey benzene waste.

Solvay submits this quarterly report in accordance with the reporting requirements of 40 CFR 61.357:

- Pursuant to 40 CFR 61.357(d)(6), Solvay USA Inc. hereby certifies that all required inspections were performed. The required inspections are itemized in Table 1.
- Pursuant to 61.357(d)(7)(iv)(G), there has been no change in the location at which the tank vent stream is introduced into the primary control device flame zone, the SARU industrial furnace.

Solvay USA Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012

- Pursuant to 40 CFR 61.357(d)(7)(iv)(A), there have been no 3-hour periods during which the average temperature of the gas stream in the combustion zone for the TS Vapor Combustor was <50°F below design temperature when being used as the control device for the TS storage tanks.

Please contact Floyd Dickerson at (713) 924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Mr. Arturo Blanco, Bureau of Air Quality Control, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

Table 1

Solvay USA Inc.
Houston, Texas
Benzene Waste NESHAP Inspection Requirements
For Quarterly Period Ending: September 30, 2013

Inspection	Was inspection performed?	Exceptions Noted
Annual Method 21 inspections of tank covers and openings per 61.343(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of tank covers and openings per 61.343(c)	x Yes Except as Noted	
Initial and annual Method 21 inspections of containers per 61.345(a)(1)	x Yes Except as Noted	
Initial and quarterly visual inspections of containers per 61.345(b)	x Yes Except as Noted	
Annual Method 21 inspections of treatment system openings (Regeneration Unit No. 2) per 61.348(e)(3)(ii)	x Yes Except as Noted	
Annual Method 21 inspections of closed vent systems (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of closed vent systems and control devices (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace, including the vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(f)	x Yes Except as Noted	
Daily inspections of control device continuous monitoring data (temperature of TS vapor combustor and "selected parameter" on Regeneration Unit No. 2 industrial furnace) per 61.354(c)	x Yes Except as Noted	

Note: Where annual inspections are listed, they were not necessarily performed during this quarterly reporting period, but have been performed in the last year.



RECEIVED

JUL 31 2013

July 26, 2013

**Air/Toxics & Inspection
Coordination Branch
6EN-A**

Via FedEx

Chief, Environmental Enforcement
Division
Environment and Natural Resources
Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, DC 20044-7611

David Schnare
U.S. Environmental Protection Agency
Headquarters
Ariel Rios South Building, Rm #2117B
1200 Pennsylvania Avenue, N.W.
Mailcode 2242A
Washington D.C. 20460

Jan Gerro
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Mailcode 6RCEA
Dallas, TX 75202

Himanshu Vyas
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Mailcode 6ENAT
Dallas, TX 75202

**Re: Rhodia Inc. – Consent Decree Semi-Annual Report
U.S. v. Rhodia, USDC (N.D. Ind.) Case No. 2: 07-CV-134-WCL**

Ladies and Gentlemen:

In accordance with Section VII of the Consent Decree ("CD") entered in the above-entitled matter, enclosed please find the Semi-Annual Report for Rhodia's Houston, Texas facility. The Report satisfies, together with the other supporting documents enclosed, Rhodia's obligation to report on certain matters under the CD within 30 days after the end of each half calendar year (see CD ¶¶ 21-23).

If you have any questions or wish to discuss this submittal, please do not hesitate to contact me.

Thank you.

Sincerely yours,

Jeffrey S. Lang

JSL:vkd
Enclosure

Bcc: F. Sardo

Rhodia Inc. - Houston #8 and #2 Plants
Consent Decree
Semi-Annual Report for Period Covering January 1 to June 30, 2013
Civil Action No.: 2: 07-CV-134-WCL

1. Effective Dates:
 - a. Houston #8 – July 1, 2009
 - b. Houston #2 – April 1, 2014
2. Status of Construction or Compliance Measures Necessary to Meet Emissions Limits.

The plant has now completed the construction and implementation of all compliance measures necessary to meet the CD emission limits for #8 Unit. The SO₂ abatement was started up on November 19, 2008.

Construction has commenced for the Houston #2 SO₂ abatement system. The foundation has been poured, structural steel installed, the scrubber vessel has been set, and pumping and piping installation has commenced.

3. Compliance Issues and Proposed or Implemented Solutions
 - (a) Houston #8 Long-Term SO₂ Limit of 1.70 lbs/ton – The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. At no time did the plant exceed this Long-Term Limit during this reporting period. The Houston #8 unit operated below the permitted 1.70 lbs SO₂/ton of acid produced from July 1, 2012 to June 30, 2013.
 - (b) Houston #8 Short-term SO₂ limit of 3.00 lbs/ton - The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. At no time did the plant exceed this Short-Term Limit during this reporting period.
 - (c) During the reporting period, the plant has not encountered any problems, and does not anticipate encountering any problems, with any of the conditions of the Consent Decree or any applicable permits or any other event affecting the plant's performance under the Consent Decree.

Rhodia Inc. - Houston #8 and #2 Plants
Consent Decree
Semi-Annual Report for Period Covering January 1 to June 30, 2013
Civil Action No.: 2: 07-CV-134-WCL

4. Status of Permit Applications

Houston Title V air permit O-03049 was approved on June 28, 2012. Requirements for compliance with 40 CFR Part 60.83(a)(1) (sulfuric acid mist) Regen #2 and compliance with the Consent Decree SO₂ emission rates for Regen #2 have been included as conditions in the Title V air permit. An amendment to the Houston Title V air permit is being prepared to allow for the start-up of the SO₂ abatement system in Houston #2.

The application to amend air permit 4802 for installation of the SO₂ abatement system in Houston #2 was approved by TCEQ and USEPA on February 10, 2012. The permit amendment to the RCRA permit authorizing installation of the SO₂ abatement system in Houston #2 was approved by TCEQ on October 18, 2012.

Operation and Maintenance Work

The plant does not currently have any operation or maintenance work pending as a result of any of the conditions of the Consent Decree.

5. Reports to Agencies

Rhodia has installed a dual range SO₂ and a new O₂ CEMS for the Houston #8 in 2008. The SO₂ and O₂ CEMS monitor and record the 3-hour arithmetic average SO₂ emission rate in units of lbs. SO₂ per ton 100% acid produced.

The CEMS were certified and calibrated, and has been maintained and operated in accordance with the applicable requirements of 40 CFR 60.11, 60.13, Part 60, Appendix B Performance Specification 2, and Part 60 Appendix F Procedure 1.

A relative accuracy test (RATA) was conducted on February 25, 2013 on the stack SO₂ and O₂. A cylinder gas audit was conducted on May 8, 2013 on the stack SO₂ and O₂. The CEMS passed these tests.

The plant submitted Excess Emission Reports for SO₂ per 40 CFR 60.7(c)-(d) and Data Assessment Reports for SO₂ CEMS per 40 CFR Part 60, Appendix F for the first and second calendar quarters of 2013 to the US Environmental Protection Agency (USEPA) and TCEQ.

A copy of the semiannual report is attached which includes the results of the cylinder gas audits.

Rhodia Inc. - Houston #8 and #2 Plants
Consent Decree
Semi-Annual Report for Period Covering January 1 to June 30, 2013
Civil Action No.: 2: 07-CV-134-WCL

I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and their attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gather and present the information contained therein. I further certify, based on my personal knowledge or on my inquiry of those individuals immediately responsible for obtaining the information, that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowingly and willfully submitting a materially false statement.

Name/Position: William McConnell/Plant Manager of Baytown and Houston Plants

Signature: William J. McConnell

Date: 7/9/2013



Solvay USA Inc.
Houston Plant

RECEIVE

CERTIFIED MAIL: Return Receipt Requested (7011 2000 0001 4575 1071)

April 4, 2014

APR 10 2014

Mr. Jeff Robinson
Chief, Air Permits Section (6PD-R)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Air/Toxics & Inspection
Coordination Branch
6EN-A

Re: Solvay Benzene NESHAP, Subpart FF, Quarterly Report
January 1, 2014 to March 31, 2014
EPA ID No.: TXD008099079

Dear Mr. Robinson:

Solvay USA Inc., in Houston, Texas owns and operates a Sulfuric Acid Regeneration Plant. In addition to the regeneration of sulfuric acid, the plant incinerates hazardous waste, under the conditions of the facility's RCRA Part B Permit (HW-50095).

Solvay receives benzene waste streams from offsite customers to use as fuel in the Sulfuric Acid Regeneration Unit No. 2 (SARU) industrial furnace which is permitted under 40 CFR 266 Subpart H. Thus, the SARU industrial furnace is a treatment process for the waste and are exempt from testing and monitoring per 40 CFR 61.348(d)(1) and 61.354(a). The benzene waste streams may be stored in one or more of six treatment services (TS) storage tanks prior to treatment. The tanks are vented to the SARU industrial furnace for vapor control per 40 CFR 61.343(a). The TS Vapor Combustor provides backup vapor control for the six TS tanks. The site has no oil-water separators or individual drain systems used to convey benzene waste.

Solvay submits this quarterly report in accordance with the reporting requirements of 40 CFR 61.357:

- Pursuant to 40 CFR 61.357(d)(6), Solvay USA Inc. hereby certifies that all required inspections were performed. The required inspections are itemized in Table 1.
- Pursuant to 61.357(d)(7)(iv)(G), there has been no change in the location at which the tank vent stream is introduced into the primary control device flame zone, the SARU industrial furnace.

Solvay USA Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Mr. Robinson

Page 2

- Pursuant to 40 CFR 61.357(d)(7)(iv)(A), there have been no 3-hour periods during which the average temperature of the gas stream in the combustion zone for the TS Vapor Combustor was <50°F below design temperature when being used as the control device for the TS storage tanks.

Please contact Floyd Dickerson at (713) 924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Mr. Arturo Blanco, Bureau of Air Quality Control, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

Table 1

**Solvay USA Inc.
Houston, Texas
Benzene Waste NESHAP Inspection Requirements
For Quarterly Period Ending: March 31, 2014**

Inspection	Was inspection performed?	Exceptions Noted
Annual Method 21 inspections of tank covers and openings per 61.343(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of tank covers and openings per 61.343(c)	x Yes Except as Noted	
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Daily inspections of control device continuous monitoring data (temperature of TS vapor combustor and "selected parameter" on Regeneration Unit No. 2 industrial furnace) per 61.354(c)	x Yes Except as Noted	

Note: Where annual inspections are listed, they were not necessarily performed during this quarterly reporting period, but have been performed in the last year.



*Solvay USA Inc.
Houston Plant*

CERTIFIED MAIL: RETURN RECEIPT REQUESTED (7011 2000 0001 4575 4195)

February 27, 2014

Mr. Jeff Robinson
Air Permits Section
Mail Code 6PD-R
U.S. EPA – Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

RE: Benzene Waste Operations NESHAP
Industrial Solid Waste Registration No. 31019
Hazardous Waste Permit No. HW-50095
40 CFR Part 61, Subpart FF
EPA ID No. TXD008099079

Dear Mr. Robinson:

Enclosed please find a report for the 2013 calendar year Benzene Waste Operations summary for Solvay USA Inc.'s Houston, Texas facility. Solvay operates a commercial industrial furnace permitted under 40 CFR Part 264 and Part 266 Subpart H by the State of Texas. This report is required under 40 CFR Part 61, Subpart FF-National Emission Standard for Benzene Waste Operations.

We have reviewed the status of each waste stream subject to regulation under this standard. In accordance with section 61.355(a), the Total Annual Benzene (TAB) quantity from this facility's waste operations was 39.7 megagrams for the operating year 2013.

Quarterly fugitive emission monitoring did not identify any emissions >500 ppm as defined in 40 CFR 61.343(a)(1)(i)(A).

Solvay documented all daily visual inspections of the hazardous waste operations area as required in the quarterly inspection requirement as defined in 40 CFR 61.343(c). Visual inspections included sight, smell and sound observations and found no leaks in 2013.

If there are any questions, or if further information is required, please contact me at 713-924-1408.

Sincerely,



W. F. Dickerson
Environmental Manager

Attachment

Solvay USA Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012

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RECEIVE

6 2014

Air/Toxics & Inspection
Coordination Branch
6EN-A

CC: Air Section Manager, TCEQ, Region 12, Houston
Mr. Bob Allen, Director, Environmental Public Health Division,
Harris County Public Health and Environmental Services
Mr. Arturo Blanco, City of Houston, Bureau of Air Control

Solvay USA Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Solvay USA Inc. Houston Plant
Calendar Year 2013 Annual Benzene Report

40 CFR 61 Subpart FF - Benzene Annual Report

61.357(a)(2)		61.357(a)(3)(i)	61.357(a)(3)(ii)	61.357(a)(3)(iii)	61.357(a)(3)(iv)	61.357(a)(3)(v)	61.357(a)(3)(vi)
Waste Stream	Controlled Benzene Emissions	Water Content of Waste Stream >10%	Waste Stream a Process Wastewater Stream, Product Tank Drawdown, or Landfill Leachate	Annual Waste Quantity (Mg/yr)	Range of Benzene Concentration (ppmw)	Annual Average Flow Weighted Benzene Concentration (ppmw)	Annual Benzene Quantity (Mg/yr)
9109003	Y	Y	Y	361.8	0-10	10	0.0
9104004	Y	N	N	229.9	10-200	200	0.0
0312003	Y	N	N	144.8	0-10	10	0.0
0312002	Y	N	N	623.3	10,000-50,000	50,000	31.2
0706008	Y	Y	N	203.2	0-10,000	10,000	2.0
1301002	Y	Y	Y	198.3	130-1,300	1,300	0.3
1303001	Y	Y	Y	656.0	500-6,000	6,000	3.9
1205001	Y	N	N	394.7	0-10	10	0.0
0912006	Y	N	N	1903.3	0-1,000	1,000	1.9
9405021	Y	Y	Y	137.4	10-2,000	2,000	0.3
TOTAL							39.7
							Mg/yr

Lbs. of
Waste
Burned

797,600
506,790
319,140
1,374,040
448,060
437,160
1,446,282
870,240
4,196,167
303,020

GEN-AA



SOLVAY

asking more from chemistry®

January 29, 2014

Via FedEx

Chief, Environmental Enforcement
Division
Environment and Natural Resources
Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, DC 20044-7611
Jan Gerro
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Mailcode 6RCEA
Dallas, TX 75202

Phillip Brooks
U.S. Environmental Protection Agency HQ
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N.W.
Mailcode 2242A
Washington DC 20460

Himanshu Vyas

U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Mailcode 6ENAT
Dallas, TX 75202

RECEIVE

JAN 30 2014

**Air/Toxics & Inspection
Coordination Branch
6EN-A**

**Re: Rhodia Inc. – Consent Decree Semi-Annual Report
U.S. v. Rhodia, USDC (N.D. Ind.) Case No. 2: 07-CV-134-WCL**

Ladies and Gentlemen:

In accordance with Section VII of the Consent Decree ("CD") entered in the above-entitled matter, enclosed please find the Semi-Annual Report for Rhodia's Houston, Texas facility. The Report satisfies, together with the other supporting documents enclosed, Rhodia's obligation to report on certain matters under the CD within 30 days after the end of each half calendar year (*see* CD ¶¶ 21-23).

If you have any questions or wish to discuss this submittal, please do not hesitate to contact me.

Thank you.

Sincerely yours,


Jeffrey S. Lang

JSL:vkd
Enclosure

Bcc: F. Sardo

Solvay USA Inc. - Houston #8 and #2 Plants
Consent Decree
Semi-Annual Report for Period Covering July 1 to December 31, 2013
Civil Action No.: 2: 07-CV-134-WCL

1. Effective Dates:

- a. Houston #8 – July 1, 2009
- b. Houston #2 – April 1, 2014

2. Status of Construction or Compliance Measures Necessary to Meet Emissions Limits.

The plant has now completed the construction and implementation of all compliance measures necessary to meet the CD emission limits for #8 Unit. The SO₂ abatement was started up on November 19, 2008.

Construction has commenced for the Houston #2 SO₂ abatement system. The foundation has been poured, structural steel installed, the scrubber vessel has been set, pumping and piping installation has been installed and currently instrumentation is being installed.

3. Compliance Issues and Proposed or Implemented Solutions

(a) Houston #8 Long-Term SO₂ Limit of 1.70 lbs/ton – The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. At no time did the plant exceed this Long-Term Limit during this reporting period. The Houston #8 unit operated below the permitted 1.70 lbs SO₂/ton of acid produced from January 1, 2013 to December 31, 2013.

(b) Houston #8 Short-term SO₂ limit of 3.00 lbs/ton - The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. At no time did the plant exceed this Short-Term Limit during this reporting period.

(c) During the reporting period, the plant has not encountered any problems, and does not anticipate encountering any problems, with any of the conditions of the Consent Decree or any applicable permits or any other event affecting the plant's performance under the Consent Decree.

Solvay USA Inc. - Houston #8 and #2 Plants
Consent Decree
Semi-Annual Report for Period Covering July 1 to December 31, 2013
Civil Action No.: 2: 07-CV-134-WCL

4. Status of Permit Applications

Houston Title V air permit O-03049 was approved on June 28, 2012. Requirements for compliance with 40 CFR Part 60.83(a)(1) (sulfuric acid mist) Regen #2 and compliance with the Consent Decree SO₂ emission rates for Houston #2 have been included as conditions in the Title V air permit.

The permit amendment to the RCRA permit authorizing installation and start-up of the SO₂ abatement system in Houston #2 was approved by TCEQ on October 18, 2012.

Operation and Maintenance Work

The plant does not currently have any operation or maintenance work pending as a result of any of the conditions of the Consent Decree.

5. Reports to Agencies

Solvay has installed a dual range SO₂ and a new O₂ CEMS for the Houston #8 in 2008. The SO₂ and O₂ CEMS monitor and record the 3-hour arithmetic average SO₂ emission rate in units of lbs. SO₂ per ton 100% acid produced.

The CEMS were certified and calibrated, and has been maintained and operated in accordance with the applicable requirements of 40 CFR 60.11, 60.13, Part 60, Appendix B Performance Specification 2, and Part 60 Appendix F Procedure 1.

Cylinder gas audits on the stack SO₂ and O₂ CEMS were conducted on September 17, 2013 and October 12, 2013. The CEMS passed these tests.

The plant submitted Excess Emission Reports for SO₂ per 40 CFR 60.7(c)-(d) and Data Assessment Reports for SO₂ CEMS per 40 CFR Part 60, Appendix F for the third and fourth calendar quarters of 2013 to the US Environmental Protection Agency (USEPA) and TCEQ.

A copy of the semiannual report is attached which includes the results of the cylinder gas audits.

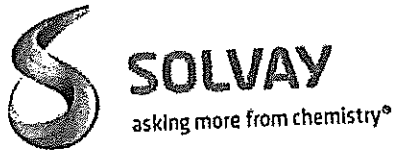
Solvay USA Inc. - Houston #8 and #2 Plants
Consent Decree
Semi-Annual Report for Period Covering July 1 to December 31, 2013
Civil Action No.: 2: 07-CV-134-WCL

I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and their attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gather and present the information contained therein. I further certify, based on my personal knowledge or on my inquiry of those individuals immediately responsible for obtaining the information, that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowingly and willfully submitting a materially false statement.

Name/Position: William McConnell/Plant Manager of Baytown and Houston Plants

Signature: William McConnell

Date: 1/14/2014



Solvay USA Inc.
Houston Plant

CERTIFIED MAIL; RETURN RECEIPT REQUESTED: (7011 2000 0001 4575 0463)

January 14, 2014

Texas Commission on Environmental Quality
Office of Permitting, Remediation and Registration
Air Permits Division, MC-163
P.O. Box 13087
Austin, Texas 78711-3087

Subject: Solvay USA Inc. (CN600125330)
Houston Plant (RN100220581)
Consent Decree (Civil Action No. 2:07CV134 WL)
Air Permit 19282 and PSD-TX-1081
Excess Emission Report for SO₂ per 40 CFR 60.7(c)-(d)
Data Assessment Report for SO₂ and O₂ CEMs per 40 CFR Part 60, Appendix F

Dear Sir or Madam:

In accordance with the Consent Decree referenced above, the Solvay USA Inc. (Solvay) formally Rhodia Inc. Houston No. 8 became subject to 40 CFR Part 60 Subpart H, Standards of Performance for Sulfuric Acid Plants on November 19, 2008. Further, the Consent Decree specifies a SO₂ emission standard that is more stringent than Subpart H and also incorporates an EPA-approved Alternative Monitoring Plan (AMP). As such, the semiannual excess emission report required by 40 CFR 60.7(c)-(d) and the semiannual data assessment report (DAR) required by 40 CFR Part 60 Appendix F, Procedure 1, Section 7 will address compliance with respect to the more stringent CD requirements and the AMP. These reports are attached for the July 1 to December 31, 2013 semiannual reporting period.

The relevant SO₂ standards required by the CD and AMP are as follows:

- Per CD paragraph 11.b.i, emissions of SO₂ are not to exceed a long term limit of 1.70 pounds per ton of 100% sulfuric acid produced (averaged over all operating hours in a rolling 365-day period).
- Per CD paragraph 11.b.ii, emissions of SO₂ are not to exceed a short term limit of 3.00 pounds per ton of 100% sulfuric acid produced (averaged over each rolling 3-hour period). This limit does not apply during periods of startup, shutdown, and malfunction.

As discussed in the AMP, Solvay uses dual analyzers to determine the conversion factor for converting monitoring data (ppm SO₂ and % O₂) into units of the standard (lbs/ton). This exceeds the "three times daily" minimum discussed in 40 CFR 60.84(b).

Solvay USA Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Solvay USA Inc.

Page 2

If you have any questions or require additional information, please contact Floyd Dickerson at 713-924-1408.

Sincerely,



William McConnell
Plant Manager

Attachment(s)

cc: Air Section Manager, TCEQ Region 12
Mr. Bob Allen, Director, Harris County Pollution Control
Mr. Arturo Blanco, Bureau Chief of Air Quality Control, Health and Human Services Department, City
of Houston
Mr. Huimamshu Vyas, EPA Region 6, 1445 Ross Avenue, Suite 1200, Mailcode 6ENAT, Dallas, TX
75202-2733
EPA Region 6, New Source Review Program, 1445 Ross Avenue, Dallas, TX 75202-2733

NSPS Excess Emissions Report
July 1 – December 31, 2013

General Information:

Pollutant:	Sulfur Dioxide (SO ₂)
Reporting period dates:	July 1 – December 31, 2013
Emission Limitation:	3.00 lbs/ton short-term, 1.70 lbs/ton long-term
Address:	8615 Manchester Street, Houston, Texas 77012
Process Unit Description (Source Unit No):	No. 8 Sulfuric Acid Unit
Monitor Manufacturer and Model No (Stack SO ₂):	Ametek Model 920
Date of Latest CEMS Certification or Audit (Stack):	October 12, 2013
CEMS span values per the AMP (Stack) ⁽¹⁾ :	Dual range: Normal: 0 – 500 ppm SO ₂ SSM: 0 – 3,600 ppm SO ₂

Notes:

- ⁽¹⁾ Refer to EPA approved Alternative Monitoring Plan for the Houston No. 8 Unit.

NSPS Excess Emissions Report
July 1 – December 31, 2013

Emission data summary – Long-Term Limit

1. Duration of excess emissions (as defined per CD and AMP) in reporting period due to:	
a. Startup/shutdown	0 hours
b. Control equipment problems	0 hours
c. Process problems	0 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total duration of excess emission	0 hours
3. Total duration of excess emissions as percent of total source operating time	0%

Emission data summary – Short-Term Limit

1. Duration of excess emissions (as defined per CD and AMP) in reporting period due to:	
a. Startup/shutdown	NA – limit does not apply during startup/shutdown
b. Control equipment problems	0 hours
c. Process problems	0 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total duration of excess emission	0 hours
3. Total duration of excess emissions as percent of total source operating time	0%

NSPS Excess Emissions Report
July 1 – December 31, 2013

Stack SO₂ Analyzer

1. CEMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0 hours
b. Non-Monitor equipment malfunctions	0 hours
c. Quality assurance calibration	102.6 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total CEMS Downtime	102.6 hours ⁽¹⁾
3. Total CEMS Downtime as percent of total source operating time	2.32 %

Stack O₂ Analyzer

1. CEMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0 hours
b. Non-Monitor equipment malfunctions	0 hours
c. Quality assurance calibration	102.6 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total CEMS Downtime	102.6 hours ⁽¹⁾
3. Total CEMS Downtime as percent of total source operating time	2.32 %

- ⁽¹⁾ The Houston #8 Unit followed procedures specified in an EPA approved Alternative Monitoring Plan (AMP) for CEMS malfunctions. In accordance with the AMP, during CEMS malfunctions lasting more than 24 continuous hours Rhodia generally:

- Conducted sampling with hand held monitors when the stack SO₂ and O₂ CEMS malfunctioned.

NSPS Excess Emissions Report
January 1 – June 30, 2013

Data Assessment Reports (DARs) per 40 CFR Part 60 Appendix F

Analyzer/ Pollutant/Units	Reporting Period	Accuracy Assessment			Any out-of- control periods for Calibration Drift Assessment?
		Type (RATA, CGA, or RAA)	Any Out-of- Control Periods?	Notes	
Stack SO ₂ , ppm	3Q13	CGA	No	Report enclosed	No
	4Q13	CGA	No	Report enclosed	No
Stack O ₂ , %	3Q13	CGA	No	Report enclosed	No
	4Q13	CGA	No	Report enclosed	No

Describe any changes since last quarter in CEMS, process or controls:

There have been no changes in the CEMS, process, or controls since the unit was started on November 19, 2008 .

***** Certification Statement for Summary Report per 40 CFR 60.7(d)*****

I certify that the information contained in this report is true, accurate, and complete.

 William McConnell
 Name of Responsible Official

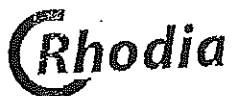
William J. McConnell

 Signature

 Plant Manager
 Title

1/14/2014

 Date



Eco Services - Houston

O₂

Quarterly Cylinder Gas Audit Checklist Stack SO₂ Analyzer

Unit Number (Circle One):

2

⑧

Date: 9/17/13 Time: 9:30A
Serial Number: VE-920-8700-2

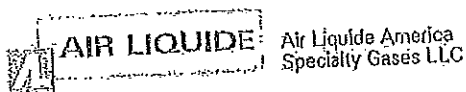
Technician:

Signature:

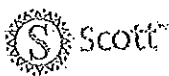
Rob Barrera
Rob Barrera

Cylinder ID number	ALM 036115		ALM 002590			
Date of Certification	5/20/11		5/20/11			
Type of certification (c.g. EPA Protocol 1 or CRM).	EPA Protocol 1		EPA Protocol 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C _a (ppm)	5.09	15.3	5.09	15.3	5.09	15.3
CEM Response value C _m (ppm)	4.98	15.5	5.01	15.5	5.00	15.3
Accuracy A (% or ppm)	-2.161%	1.307%	-1.572%	1.307%	-1.768%	1.307%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: Interference Free Multi-Component EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No.: 4601416833
Document #: 41649621-006

Customer
RHODIA INC LAB

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.

Cylinder Number: ALM036115
Cylinder Pressure***: 1934 PSIG

Certification Date: 20May2011

Exp. Date: 20May2013
Batch No: LAP0041227

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
SULFUR DIOXIDE *	274 PPM	+/- 1%	Direct NIST and VSL
OXYGEN	15.3 %	+/- 1%	
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE
NTRM 0260	15Jan2012
NTRM 2350	01May2013

CYLINDER NUMBER
KAL003774
K026427

CONCENTRATION
255.5 PPM
23.50 %

COMPONENT
SULFUR DIOXIDE
OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#
FTIR/MG-09-149
SERVOMEX/MODEL 244A/701716

DATE LAST CALIBRATED
12May2011
25Apr2011

ANALYTICAL PRINCIPLE
FTIR
PARAMAGNETIC

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

SULFUR DIOXIDE *

Date: 13May2011	Response Unit: PPM
Z1=-0.06656	R1=256.6585
R2=256.8202	T1=276.1549
Z2=0.11493	T2=275.4841
Z3=0.15836	T3=275.6497
Avg. Concentration:	274.1 PPM

OXYGEN

Date: 19May2011	Response Unit: VOLTS
Z1=0.00000	R1=0.94000
R2=0.94000	T1=0.61100
Z2=0.00000	T2=0.61140
Z3=0.00000	T3=0.61140
Avg. Concentration:	15.27 %

Second Triad Analysis

Date: 20May2011	Response Unit: PPM
Z1=-0.32212	R1=255.5447
R2=255.6349	T1=274.2461
Z2=0.15853	T2=274.5593
Z3=0.33653	T3=274.7581
Avg. Concentration:	274.1 PPM

Calibration Curve

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 9.99998E-1
Constants: A = 0.00000E+0
B = 9.99951E-1 C = 3.00000E-6
D = 0.00000E+0 E = 0.00000E+0

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = .9999987
Constants: A = .000249421
B = 24.9768807 C =
D = E =

Special Notes:

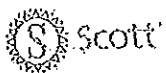
680 CGA DEW POINT 40 F

APPROVED BY:

Ramien JR



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: Interference Free Multi-Component EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No.: 4501416833
Document #: 41649621-005

Customer
RHODIA INC LAB

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.

Cylinder Number: ALM002590
Cylinder Pressure***: 1936 PSIG

Certification Date: 20May2011

Exp. Date: 20May2013
Batch No: LAP0041255

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
	125	PPM	+/- 1%	Direct NIST and VSL
SULFUR DIOXIDE *	5.09	%	+/- 1%	
OXYGEN		BALANCE		
NITROGEN				

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO. EXPIRATION DATE
NTRM 0260 15Jan2012
NTRM 2350 01May2013

CYLINDER NUMBER
KAL003774
K026427

CONCENTRATION
255.5 PPM
23.50 %

COMPONENT
SULFUR DIOXIDE
OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#
FTIR/IMG-09-149
SERVOMEX/MODEL 244A/701/716

DATE LAST CALIBRATED
12May2011
25Apr2011

ANALYTICAL PRINCIPLE
FTIR
PARAMAGNETIC

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

SULFUR DIOXIDE *

Date: 13May2011 Response Unit: PPM
Z1=0.01023 R1=253.7089 T1=123.9645
R2=253.7350 Z2=0.07108 T2=124.0038
Z3=0.09222 T3=124.1083 R3=253.8609
Avg. Concentration: 124.8 PPM

Second Triad Analysis

Date: 20May2011 Response Unit: PPM
Z1=0.00195 R1=253.7032 T1=123.9691
R2=253.8925 Z2=0.10441 T2=124.0436
Z3=0.12747 T3=124.0462 R3=254.0720
Avg. Concentration: 124.8 PPM

Calibration Curve

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 9.99985E-1
Constants: A = 0.00000E+0
B = 9.94461E-1 C = 0.00000E+0
D = 0.00000E+0 E = 0.00000E+0

OXYGEN

Date: 19May2011 Response Unit: VOLTS
Z1=0.00000 R1=0.94000 T1=0.20370
R2=0.94000 Z2=0.00000 T2=0.20400
Z3=0.00000 T3=0.20400 R3=0.94000
Avg. Concentration: 5.093 %

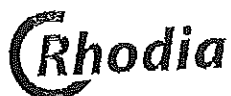
Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = .9999987
Constants: A = .000249421
B = 24.9768607 C =
D = E =

Special Notes:

660 CGA DEW POINT 40 F

APPROVED BY:

Ramien JR



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist Stack SO₂ Analyzer

Unit Number (Circle One):

2

⑧

Date: 9/17/13

Time: 9:30A

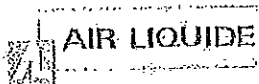
Technician: Rudy Barraza

Serial Number: VE-920-8700-2

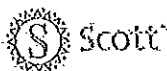
Signature: [Signature]

Cylinder ID number	ALM 036115		ALM 002590			
Date of Certification	5/20/11		5/20/11			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Protocol 1		EPA Protocol 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	125	274	125	274	125	274
CEM Response value C_m (ppm)	126	277	125	276	124	277
Accuracy A (% or ppm)	.800%	1.095%	0.9%	.730%	.800%	1.095%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: Interference Free Multi-Component EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No. 4501416833

Customer
RHODIA INC LAB

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

Document #: 41649621-005

8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.

Cylinder Number: ALM002590
Cylinder Pressure***: 1936 PSIG

Certification Date: 20May2011

Exp. Date: 20May2013
Batch No: LAP0041255

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
SULFUR DIOXIDE *	125 PPM	+/- 1%	Direct NIST and VSL
OXYGEN	5.09 %	+/- 1%	
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 0260	16Jan2012	KAL003774	255.5 PPM	SULFUR DIOXIDE
NTRM 2350	01May2013	K026427	23.50 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#
FTIR/MG-09-149
SERVOMEX/MODEL 244A/701/716

DATE LAST CALIBRATED
12May2011
25Apr2011

ANALYTICAL PRINCIPLE
FTIR
PARAMAGNETIC

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

SULFUR DIOXIDE *

Date: 13May2011 Response Unit: PPM
Z1=0.01023 R1=253.7089 T1=123.9645
R2=253.7350 Z2=0.07108 T2=124.0038
Z3=0.09222 T3=124.1093 R3=253.8609
Avg. Concentration: 124.8 PPM

Second Triad Analysis

Date: 20May2011 Response Unit: PPM
Z1=0.00195 R1=253.7032 T1=123.9691
R2=253.8925 Z2=0.10441 T2=124.0436
Z3=0.12747 T3=124.0462 R3=254.0720
Avg. Concentration: 124.8 PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99985E-1
Constants: A = 0.00000E+0
B = 9.94451E-1 C = 0.00000E+0
D = 0.00000E+0 E = 0.00000E+0

OXYGEN

Date: 19May2011 Response Unit: VOLTS
Z1=0.00000 R1=0.94000 T1=0.20370
R2=0.94000 Z2=0.00000 T2=0.20400
Z3=0.00000 T3=0.20400 R3=0.94000
Avg. Concentration: 5.093 %

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = .9999987
Constants: A = .000249421
B = 24.9768607 C =
D = E =

Special Notes:

860 CGA DEW POINT 40 F

APPROVED BY:

Ramien JR



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: Interference Free Multi-Component EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No.: 4601416833
Document #: 41649621-006

Customer
RHODIA INC LAB

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.

Cylinder Number: ALM036115
Cylinder Pressure***: 1934 PSIG

Certification Date: 20May2011

Exp. Date: 20May2013
Batch No: LAP0041227

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
	274	PPM	+/- 1%	Direct NIST and VSL
SULFUR DIOXIDE *	15.3	%	+/- 1%	
OXYGEN		BALANCE		
NITROGEN				

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE
NTRM 0260	15Jan2012
NTRM 2350	01May2013

CYLINDER NUMBER
KAL003774
K026427

CONCENTRATION
256.5 PPM
23.50 %

COMPONENT
SULFUR DIOXIDE
OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#
FTIR/MG-09-149
SERVOMEX/MODEL 244A/701716

DATE LAST CALIBRATED
12May2011
25Apr2011

ANALYTICAL PRINCIPLE
FTIR
PARAMAGNETIC

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

SULFUR DIOXIDE *

Date: 13May2011	Response Unit: PPM
Z1=-0.06656	R1=256.6585
R2=256.8202	T1=275.1549
Z3=0.15836	T2=275.4841
	T3=275.6497
	R3=258.8364
Avg. Concentration:	274.1 PPM

OXYGEN

Date: 19May2011	Response Unit: VOLTS
Z1=0.00000	R1=0.94000
R2=0.94000	T1=0.61100
Z3=0.00000	T2=0.61140
	T3=0.61140
	R3=0.94000
Avg. Concentration:	15.27 %

Second Triad Analysis

Date: 20May2011	Response Unit: PPM
Z1=-0.32212	R1=256.5447
R2=256.6349	T1=274.2461
Z3=0.33653	T2=274.5593
	T3=274.7581
	R3=258.5102
Avg. Concentration:	274.1 PPM

Calibration Curve

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 9.99998E-1
Constants: A = 0.00000E+0
B = 9.99951E-1 C = 3.00000E-6
D = 0.00000E+0 E = 0.00000E+0

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = .9999987
Constants: A = .000249421
B = 24.9768807 C =
D = E =

Special Notes: 680 CGA DEW POINT 40 F

APPROVED BY:

Ramlen JR



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist
Stack SO₂ Analyzer

Unit Number (Circle One):

2

⑧

Date: 9/17/13 Time: 10:20A
Serial Number: VE-920-8700-2

Technician: Rody Barrera
Signature: [Signature]

Cylinder ID number	ALM 045898		ALM 058443			
Date of Certification	7/18/2011		7/18/2011			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Protocol 1		EPA Protocol 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	909	1970	909	1970	909	1970
CEM Response value C_m (ppm)	900	1965	906	1971	908	1972
Accuracy A (% or ppm)	-9.90%	-2.54%	-3.30%	.051%	-1.10%	.102%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



AIR LIQUIDE

Air Liquide America
Specialty Gases LLC



Scott

COMPLIANCE CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No. 44501452424
Document #: 42303115-003

Customer
RHODIA INC. STOREROOM

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

ATTN PAUL BARNETT
8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION

Gas Type : SO₂

This certification was performed according to EPA Traceability Protocol for Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.

Cylinder Number: ALM045898
Cylinder Pressure***: 1970 PSIG

Certification Date: 18 Jul 2011

Exp. Date: 17 Jul 2014
Batch No: LAP0044990

COMPONENT
SULFUR DIOXIDE *
NITROGEN

CERTIFIED CONCENTRATION (Moles)
909 PPM
BALANCE

ACCURACY**
+/- 2%

TRACEABILITY
NIST and VSL

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol procedures, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.
NTRM 1662

EXPIRATION DATE
01 Jun 2016

CYLINDER NUMBER
KAL003078

CONCENTRATION
975.0 PPM

COMPONENT
SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#
FTIR/MG-09-149

DATE LAST CALIBRATED
08 Jul 2011

ANALYTICAL PRINCIPLE
FTIR

Special Notes:

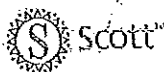
DEW POINT 40 F CGA 660 RDIAQRTY005

APPROVED BY:

GARY WRIGHT



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No.: 4501462424
Document #: 42303115-004

Customer
RHODIA INC, STOREROOM

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

ATTN PAUL BARNETT
8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION

Gas Type : SO₂

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.

Cylinder Number: ALM058443
Cylinder Pressure***: 1963 PSIG

Certification Date: 19Jul2011

Exp. Date: 18Jul2014
Batch No: LAP0045081

COMPONENT
SULFUR DIOXIDE *
NITROGEN

CERTIFIED CONCENTRATION (Moles)
1,970 PPM
BALANCE

ACCURACY**
+/- 2%

TRACEABILITY
NIST and VSL

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol procedures, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.
NTRM 1684

EXPIRATION DATE
02Oct2011

CYLINDER NUMBER
ALM043439

CONCENTRATION
2402 PPM

COMPONENT
SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#
FTIR/MG00-149

DATE LAST CALIBRATED
08Jul2011

ANALYTICAL PRINCIPLE
FTIR

Special Notes:

DEW POINT 40 F- CGA 660 RDIAORTY006
PO# 4501462424 ITEM 150

APPROVED BY:

GARY WRIGHT



Eco Services - Houston

02

Quarterly Cylinder Gas Audit Checklist Stack SO₂ Analyzer

Unit Number (Circle One):

2

8

Date: 10/12/13 Time: 159 PM
Serial Number: VE-920-8700-2

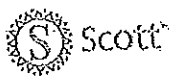
Technician: Paul Barnett
Signature: Paul Barnett

Cylinder ID number	ALM 002590		ALM 036115			
Date of Certification	5-20-2011		5-20-2011			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA-Protocol 1 125 ppm SO ₂ 5.09 9602		EPA-Protocol 1 274 ppm SO ₂			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C _a (ppm)	5.09	15.3	5.09	15.3	5.09	15.3
CEM Response value C _m (ppm)	5.00	15.4	5.082	15.4	5.02	15.4
Accuracy A (% or ppm)	-0.09%	+0.1%	-0.07%	+0.1%	-0.07%	+0.1%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: Interference Free Multi-Component EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No.: 4501416833
Document #: 41649621-006

Customer
RHODIA INC LAB

AIR LIQUIDE-AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.

Cylinder Number: ALM036115
Cylinder Pressure: 1934 PSIG

Certification Date: 20May2011

Exp. Date: 20May2013
Batch No: LAP0041227

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
SULFUR DIOXIDE *	274 PPM	+/- 1%	Direct NIST and VSL
OXYGEN	15.3 %	+/- 1%	
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE
NTRM 0260	15Jan2012
NTRM 2350	01May2013

CYLINDER NUMBER
KAL003774
K026427

CONCENTRATION
255.5 PPM
23.50 %

COMPONENT
SULFUR DIOXIDE
OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#
FTIR/MG-09-149
SERVOMEX/MODEL 244A/701/716

DATE LAST CALIBRATED
12May2011
25Apr2011

ANALYTICAL PRINCIPLE
FTIR
PARAMAGNETIC

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

SULFUR DIOXIDE *

Date: 13May2011 Response Unit: PPM
Z1=-0.06658 R1=256.6585 T1=276.1549
R2=256.8202 Z2=0.11493 T2=276.4641
Z3=0.15836 T3=275.6497 R3=256.8364
Avg. Concentration: 274.1 PPM

OXYGEN

Date: 19May2011 Response Unit: VOLTS
Z1=0.00000 R1=0.94000 T1=0.61100
R2=0.94000 Z2=0.00000 T2=0.61140
Z3=0.00000 T3=0.61140 R3=0.94000
Avg. Concentration: 15.27 %

Second Triad Analysis

Date: 20May2011 Response Unit: PPM
Z1=-0.32212 R1=255.5447 T1=274.2461
R2=255.6349 Z2=0.15853 T2=274.5593
Z3=0.33653 T3=274.7581 R3=256.5102
Avg. Concentration: 274.1 PPM

Calibration Curve

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 9.99998E-1
Constants: A = 0.00000E+0
B = 9.99951E-1 C = 3.00000E-6
D = 0.00000E+0 E = 0.00000E+0

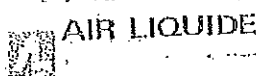
Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = .9999987
Constants: A = .000249421
B = 24.9768807 C =
D = E =

Special Notes:

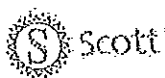
680 CGA DEW POINT 40 F

APPROVED BY:

Ramien JR



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: Interference Free Multi-Component EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No.: 4501416833
Document #: 41649621-005

Customer
RHODIA INC LAB

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM002590
Cylinder Pressure***: 1936 PSIG

Certification Date: 20May2011

Exp. Date: 20May2013
Batch No: LAP0041255

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
SULFUR DIOXIDE *	125 PPM	+/- 1%	Direct NIST and VSL
OXYGEN	5.09 %	+/- 1%	
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 0260	15Jan2012	KAL003774	255.5 PPM	SULFUR DIOXIDE
NTRM 2360	01May2013	K026427	23.50 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#
FTIR/MG-09-149
SERVOMEX/MODEL 244A/701/Z16

DATE LAST CALIBRATED
12May2011
25Apr2011

ANALYTICAL PRINCIPLE
FTIR
PARAMAGNETIC

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas. r = Correlation Coefficient)

First Triad Analysis

SULFUR DIOXIDE *

Date: 13May2011 Response Unit: PPM
Z1=0.01023 R1=253.7089 T1=123.9645
R2=253.7350 Z2=0.07108 T2=124.0038
Z3=0.09222 T3=124.1083 R3=253.8609
Avg. Concentration: 124.8 PPM

OXYGEN

Date: 19May2011 Response Unit: VOLTS
Z1=0.00000 R1=0.94000 T1=0.20370
R2=0.94000 Z2=0.00000 T2=0.20400
Z3=0.00000 T3=0.20400 R3=0.94000
Avg. Concentration: 5.093 %

Second Triad Analysis

Date: 20May2011 Response Unit: PPM
Z1=0.00195 R1=253.7032 T1=123.9891
R2=253.8925 Z2=0.10441 T2=124.0436
Z3=0.12747 T3=124.0462 R3=254.0720
Avg. Concentration: 124.8 PPM

Calibration Curve

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 0.99985E-1
Constants: A = 0.00000E+0
B = 9.94451E-1 C = 0.00000E+0
D = 0.00000E+0 E = 0.00000E+0

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 0.999987
Constants: A = 0.00249421
B = 24.9768607 C =
D = E =

Special Notes:

660 CGA DEW POINT 40 F

APPROVED BY:

Ramlen JR



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist Stack SO₂ Analyzer

Unit Number (Circle One):

2

8

Date: 10/12/13

Time: 1:59 pm

Technician: Paul Barnett

Serial Number: VE - 920 - 8700 - 2

Signature: Paul Barnett

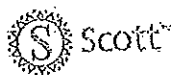
Cylinder ID number	<u>ALM Ø36115</u>		<u>ALM ØØ2590</u>			
Date of Certification	<u>5-20-2011</u>		<u>5-20-2011</u>			
Type of certification (e.g. EPA Protocol 1 or CRM).	<u>EPA Protocol 1</u>		<u>EPA Protocol 1</u>			
	<u>272 ppm SO₂</u>		<u>125 ppm SO₂</u>			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C _a (ppm)	<u>125</u>	125 <u>274</u>	125 <u>125</u>	274 <u>274</u>	<u>125</u>	<u>274</u>
CEM Response value C _m (ppm)	<u>124</u>	<u>272</u>	<u>125</u>	<u>271</u>	<u>125</u>	<u>272</u>
Accuracy A (% or ppm)	<u>-1 ppm</u>	<u>-2 ppm</u>	<u>0 ppm</u>	<u>-3 ppm</u>	<u>0 ppm</u>	<u>-2 ppm</u>

where $A = \frac{(C_m - C_a)}{C_a} \times 100$

High Range



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77671

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: Interference Free Multi-Component EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No.: 4601416833

Customer
RHODIA INC LAB

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77671

Document #: 41649621-006

8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1, September, 1997.

Cylinder Number: ALM036115
Cylinder Pressure***: 1934 PSIG

Certification Date: 20May2011

Exp. Date: 20May2013
Batch No: LAPO041227

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
	274	PPM	+/- 1%	Direct NIST and VSL
SULFUR DIOXIDE *	15.3	%	+/- 1%	
OXYGEN				
NITROGEN				

*** Do not use when cylinder pressure is below 160 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 0260	15Jan2012	KAL003774	256.6 PPM	SULFUR DIOXIDE
NTRM 2350	01May2013	K026427	23.50 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#
FTIR/IMG-09-149
SERVOMEX/MODEL 244A/701716

DATE LAST CALIBRATED

12May2011
26Apr2011

ANALYTICAL PRINCIPLE

FTIR
PARAMAGNETIC

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

SULFUR DIOXIDE *

Date: 13May2011	Response Unit: PPM	
Z1=0.06656	R1=256.6585	T1=276.1549
R2=256.8202	Z2=0.11493	T2=276.4641
Z3=0.15836	T3=276.6497	R3=256.8364
Avg. Concentration:	274.1	PPM

OXYGEN

Date: 19May2011	Response Unit: VOLTS	
Z1=0.00000	R1=0.94000	T1=0.61100
R2=0.94000	Z2=0.00000	T2=0.61140
Z3=0.00000	T3=0.61140	R3=0.94000
Avg. Concentration:	15.27	%

Second Triad Analysis

Date: 20May2011	Response Unit: PPM	
Z1=0.32212	R1=256.5447	T1=274.2461
R2=256.6349	Z2=0.15853	T2=274.5593
Z3=0.33653	T3=274.7581	R3=256.5102
Avg. Concentration:	274.1	PPM

Calibration Curve

$$\text{Concentration} = A + Bx + Cx^2 + Dx^3 + Ex^4$$
$$r = 9.99998E-1$$
$$\text{Constants: } A = 0.00000E+0$$
$$B = 9.99951E-1 \quad C = 3.00000E-6$$
$$D = 0.00000E+0 \quad E = 0.00000E+0$$

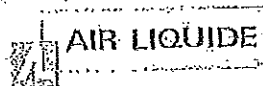
$$\text{Concentration} = A + Bx + Cx^2 + Dx^3 + Ex^4$$
$$r = .9999987$$
$$\text{Constants: } A = .000249421$$
$$B = 24.9768807 \quad C =$$
$$D = \quad E =$$

Special Notes:

660 CGA DEW POINT 40 F

APPROVED BY:

Ramien JR



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: Interference Free Multi-Component EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No.: 4501416833

Customer

RHODIA INC LAB

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

Document #: 41649621-005

8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;

Procedure G-1, September, 1997.

Cylinder Number: ALM002590
Cylinder Pressure***: 1936 PSIG

Certification Date: 20May2011

Exp. Date: 20May2013
Batch No: LAP0041255

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
SULFUR DIOXIDE *	125 PPM	+/- 1%	Direct NIST and VSL
OXYGEN	5.09 %	+/- 1%	
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 9260	15Jan2012	KAL003774	255.5 PPM	SULFUR DIOXIDE
NTRM 2350	01May2013	K028427	23.50 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#
FTIR/MG-09-149
SERVOMEX/MODEL 244A/701716

DATE LAST CALIBRATED
12May2011
25Apr2011

ANALYTICAL PRINCIPLE
FTIR
PARAMAGNETIC

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

Second Triad Analysis

Calibration Curve

SULFUR DIOXIDE *

Date: 13May2011 Response Unit: PPM
Z1=0.01023 R1=253.7089 T1=123.9645
R2=253.7350 Z2=0.07108 T2=124.0038
Z3=0.09222 T3=124.1083 R3=253.8609
Avg. Concentration: 124.8 PPM

Date: 20May2011 Response Unit: PPM
Z1=0.00195 R1=253.7032 T1=123.9691
R2=253.8925 Z2=0.10441 T2=124.0436
Z3=0.12747 T3=124.0462 R3=254.0720
Avg. Concentration: 124.8 PPM

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99985E-1
Constants: A = 0.00000E+0
B = 9.94451E-1 C = 0.00000E+0
D = 0.00000E+0 E = 0.00000E+0

OXYGEN

Date: 19May2011 Response Unit: VOLTS
Z1=0.00000 R1=0.94000 T1=0.20370
R2=0.94000 Z2=0.00000 T2=0.20400
Z3=0.00000 T3=0.20400 R3=0.94000
Avg. Concentration: 5.093 %

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = .9999987
Constants: A = .000249421
B = 24.9768607 C =
D = E =

Special Notes:

660 CGA DEW POINT 40 F

APPROVED BY:

Ramien JR



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist Stack SO₂ Analyzer

Unit Number (Circle One):

2

8

Date: 10/12/13

Time: 3:05 pm

Technician: Paul Barnett

Serial Number: VE-920-8700-2

Signature: Paul Barnett

Cylinder ID number	ALM 04898		ALM 058443			
Date of Certification	7/10/2011		7/19/2011			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Protocol 1		EPA Protocol 1			
	909 ppm SO ₂		1970 ppm SO ₂			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	909	1970	909	1970	909	1970
CEM Response value C_m (ppm)	908	1968	909	1970	908	1968
Accuracy A (% or ppm)	-1 ppm	-2 ppm	0 ppm	0 ppm	-1 ppm	-1 ppm

where $A = \frac{(C_m - C_a)}{C_a} \times 100$

Low range

**AIR LIQUIDE**Air Liquide America
Specialty Gases LLC**Scott****COMPLIANCE CLASS**
Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No.: 4601452424

Customer
RHODIA INC. STOREROOMAIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

Document #: 42303116-004

ATTN PAUL BARNETT
3615 MANCHESTER
HOUSTON TX 77012
US**ANALYTICAL INFORMATION** Gas Type : **S02**This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.Cylinder Number: **ALM058443**
Cylinder Pressure***: **1963 PSIG**Certification Date: **19Jul2011**Exp. Date: **18Jul2014**
Batch No: **LAP0045081****COMPONENT**
SULFUR DIOXIDE *
NITROGEN**CERTIFIED CONCENTRATION (Moles)**
1,970 PPM
BALANCE**ACCURACY****
+/- 2%**TRACEABILITY**
NIST and VSL

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol procedures, September 1997.

REFERENCE STANDARD**TYPE/SRM NO.**
NTRM 1004**EXPIRATION DATE**
02Oct2011**CYLINDER NUMBER**
ALM043439**CONCENTRATION**
2402. PPM**COMPONENT**
SULFUR DIOXIDE**INSTRUMENTATION****INSTRUMENT/MODEL/SERIAL#**
FTIR/IMG-00-149**DATE LAST CALIBRATED**
08Jul2011**ANALYTICAL PRINCIPLE**
FTIR

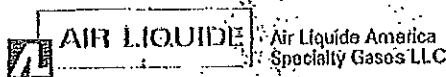
Special Notes:

DEW POINT 40 F - CGA 680 RDIAQRTY008
PO# 4601452424 ITEM 150

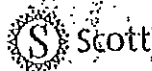
APPROVED BY:

GARY WRIGHT

Page: 1 of 1



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

P.O. No. 4501452424
Document #: 42303115-003

Customer
RHODIA INC. STOREROOM

ATTN PAUL BARNETT
8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION Gas Type : SO₂

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.

Cylinder Number: ALM045898
Cylinder Pressure***: 1970 PSIG

Certification Date: 18 Jul 2011

Exp. Date: 17 Jul 2014
Batch No: LAP0044990

COMPONENT
SULFUR DIOXIDE
NITROGEN

CERTIFIED CONCENTRATION (Moles)
909 PPM
BALANCE

ACCURACY**
+/- 2%

TRACEABILITY
NIST and VSL

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol procedures, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1662	01 Jun 2016	KAL003078	975.0 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR/MG-09-149	08 Jul 2011	FTIR

Special Notes:

DEW POINT 40 F, CGA 880 RDIAORTY005

APPROVED BY:

GARY WRIGHT



441890 v3 AC/AL/EN
SOLVAY

asking more from chemistry®

Solvay USA Inc.
Houston Plant

110600760201
GEN-AA
RECEIVE

JUL 14 2014

CERTIFIED MAIL: Return Receipt Requested (7011 2000 0001 4575 1385)

July 8, 2014

Air/Toxics & Inspection
Coordination Branch
6EN-A

Mr. Jeff Robinson
Chief, Air Permits Section (6PD-R)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Solvay Benzene NESHAP, Subpart FF, Quarterly Report
April 1, 2014 to June 30, 2014
EPA ID No.: TXD008099079

Dear Mr. Robinson:

Solvay USA Inc., in Houston, Texas owns and operates a Sulfuric Acid Regeneration Plant. In addition to the regeneration of sulfuric acid, the plant incinerates hazardous waste, under the conditions of the facility's RCRA Part B Permit (HW-50095).

Solvay receives benzene waste streams from offsite customers to use as fuel in the Sulfuric Acid Regeneration Unit No. 2 (SARU) industrial furnace which is permitted under 40 CFR 266 Subpart H. Thus, the SARU industrial furnace is a treatment process for the waste and are exempt from testing and monitoring per 40 CFR 61.348(d)(1) and 61.354(a). The benzene waste streams may be stored in one or more of six treatment services (TS) storage tanks prior to treatment. The tanks are vented to the SARU industrial furnace for vapor control per 40 CFR 61.343(a). The TS Vapor Combustor provides backup vapor control for the six TS tanks. The site has no oil-water separators or individual drain systems used to convey benzene waste.

Solvay submits this quarterly report in accordance with the reporting requirements of 40 CFR 61.357:

- Pursuant to 40 CFR 61.357(d)(6), Solvay USA Inc. hereby certifies that all required inspections were performed. The required inspections are itemized in Table 1.
- Pursuant to 61.357(d)(7)(iv)(G), there has been no change in the location at which the tank vent stream is introduced into the primary control device flame zone, the SARU industrial furnace.

Solvay USA Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Solvay USA Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Table 1

**Solvay USA Inc.
Houston, Texas
Benzene Waste NESHAP Inspection Requirements
For Quarterly Period Ending: June 30, 2014**

Inspection	Was inspection performed?	Exceptions Noted
Annual Method 21 inspections of tank covers and openings per 61.343(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of tank covers and openings per 61.343(c)	x Yes Except as Noted	
Initial and annual Method 21 inspections of containers per 61.345(a)(1)	x Yes Except as Noted	
Initial and quarterly visual inspections of containers per 61.345(b)	x Yes Except as Noted	
Annual Method 21 inspections of treatment system openings (Regeneration Unit No. 2) per 61.348(e)(3)(ii)	x Yes Except as Noted	
Annual Method 21 inspections of closed vent systems (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of closed vent systems and control devices (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace, including the vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(f)	x Yes Except as Noted	
Daily inspections of control device continuous monitoring data (temperature of TS vapor combustor and "selected parameter" on Regeneration Unit No. 2 industrial furnace) per 61.354(c)	x Yes Except as Noted	

Note: Where annual inspections are listed, they were not necessarily performed during this quarterly reporting period, but have been performed in the last year.



July 30, 2014

Via FedEx

RECEIVE

JUL 31 2014

Air Toxics & Inspection
Coordination Branch
6EN-A

Chief, Environmental Enforcement
Division
Environment and Natural Resources
Division

U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, DC 20044-7611

Jan Gerro
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Mailcode 6RCEA
Dallas, TX 75202

Phillip Brooks
U.S. Environmental Protection Agency HQ
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N.W.
Mailcode 2242A
Washington DC 20460

Himanshu Vyas
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Mailcode 6ENAT
Dallas, TX 75202

Re: Rhodia Inc. – Consent Decree Semi-Annual Report
U.S. v. Rhodia, USDC (N.D. Ind.) Case No. 2: 07-CV-134-WCL

Ladies and Gentlemen:

In accordance with Section VII of the Consent Decree ("CD") entered in the above-entitled matter, enclosed please find the Semi-Annual Report for Rhodia's Houston, Texas facility. The Report satisfies, together with the other supporting documents enclosed, Rhodia's obligation to report on certain matters under the CD within 30 days after the end of each half calendar year (*see* CD ¶¶ 21-23).

If you have any questions or wish to discuss this submittal, please do not hesitate to contact me.

Thank you.

Sincerely yours,



Jeffrey S. Lang

JSL:vkd
Enclosure

Bcc: F. Sardo

Jeffrey S. Lang, Senior Counsel, Health, Safety and Environment
Solvay USA Inc.

CN 7500, Cranbury, NJ 08512-7500; Telephone: (609) 860-3432; Fax: (609) 860-5446
Courier Address: 8 Cedar Brook Drive, Cranbury, NJ 08512; E-Mail: jeffrey.lang@Solvay.com

Solvay USA Inc. - Houston #8 and #2 Plants
Consent Decree
Semi-Annual Report for Period Covering January 1 to June 30, 2014
Civil Action No.: 2: 07-CV-134-WCL

1. Effective Dates:

-
- a. Houston #8 – July 1, 2009
 - b. Houston #2 – April 1, 2014

2. Status of Construction or Compliance Measures Necessary to Meet Emissions Limits.

The plant has now completed the construction and implementation of all compliance measures necessary to meet the CD emission limits for #8 Unit. The SO₂ abatement unit was started up on November 19, 2008.

Construction has been completed and implementation of all compliance measures necessary to meet the CD emission limits for #2 Unit. The SO₂ abatement unit was started up on February 7, 2014.

The plant has completed the implementation of all compliance measures necessary to meet the CD emission limits.

3. Compliance Issues and Proposed or Implemented Solutions

(a) Houston #8 Long-Term SO₂ Limit of 1.70 lbs./ton – The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. At no time did the plant exceed this Long-Term Limit during this reporting period. The Houston #8 unit operated below the permitted 1.70 lbs. SO₂/ton of acid produced from July 1, 2013 to June 30, 2014.

(b) Houston #8 Short-term SO₂ limit of 3.00 lbs./ton - The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. At no time did the plant exceed this Short-Term Limit during this reporting period.

(c) Houston #2 Long-Term SO₂ Limit of 1.80 lbs./ton – The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. The start of the Long-Term Limit compliance period is April 1, 2014.

(d) Houston #2 Short-term SO₂ limit of 3.00 lbs./ton - The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. On June 19, 2014, Houston #2 exceeded the 3.00 lbs./ton limit for 2 hours and 35 minutes.

Solvay USA Inc. - Houston #8 and #2 Plants
Consent Decree
Semi-Annual Report for Period Covering January 1 to June 30, 2014
Civil Action No.: 2: 07-CV-134-WCL

(e) During the reporting period, the plant has not encountered any problems, and does not anticipate encountering any problems, with any of the conditions of the Consent Decree or any applicable permits or any other event affecting the plant's performance under the Consent Decree.

4. Status of Permit Applications

Houston Title V air permit O-03049 was approved on June 28, 2012. Requirements for compliance with 40 CFR Part 60.83(a)(1) (sulfuric acid mist) Houston #2 and compliance with the Consent Decree SO₂ emission rates for Houston #2 have been included as conditions in the Title V air permit.

Operation and Maintenance Work

The plant does not currently have any operation or maintenance work pending as a result of any of the conditions of the Consent Decree.

5. Reports to Agencies

Solvay has installed a dual range SO₂ and a new O₂ CEMS for the Houston #8 in 2008. The SO₂ and O₂ CEMS monitor and record the 3-hour arithmetic average SO₂ emission rate in units of lbs. SO₂ per ton 100% acid produced.

The CEMS were certified and calibrated, and has been maintained and operated in accordance with the applicable requirements of 40 CFR 60.11, 60.13, Part 60, Appendix B Performance Specification 2, and Part 60 Appendix F Procedure 1.

A relative accuracy test was conducted on the Houston #8 stack SO₂ and O₂ CEMS on March 12, 2014. A cylinder gas audit was conducted on the stack SO₂ and O₂ CEMS were conducted on June 28, 2014. The CEMS passed these tests.

Solvay has installed a dual range stack SO₂ CEMS and a new main gas blower SO₂ CEMS for the Houston #2 in 2014. The SO₂ CEMS monitor and record the 3-hour arithmetic average SO₂ emission rate in units of lbs. SO₂ per ton 100% acid produced.

The CEMS were certified and calibrated, and has been maintained and operated in accordance with the applicable requirements of 40 CFR 60.11, 60.13, Part 60, Appendix B Performance Specification 2, and Part 60 Appendix F Procedure 1.

A relative accuracy test was conducted on the Houston #2 stack SO₂ CEMS on April 7, 2014. The Houston #2 main gas blower CEMS quarterly cylinder gas audits were conducted on April 9, 2014. The CEMS passed the gas audit tests.

Solvay USA Inc. - Houston #8 and #2 Plants
Consent Decree
Semi-Annual Report for Period Covering January 1 to June 30, 2014
Civil Action No.: 2: 07-CV-134-WCL

The plant submitted Excess Emission Reports for SO₂ per 40 CFR 60.7(c)-(d) and Data Assessment Reports for SO₂ CEMS per 40 CFR Part 60, Appendix F for the first and second calendar quarters of 2014 to the US Environmental Protection Agency (USEPA) and TCEQ.

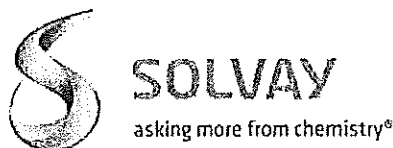
A copy of the semiannual report is attached which includes the results of the RATA and cylinder gas audits.

I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and their attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gather and present the information contained therein. I further certify, based on my personal knowledge or on my inquiry of those individuals immediately responsible for obtaining the information, that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowingly and willfully submitting a materially false statement.

Name/Position: William McConnell/Plant Manager of Baytown and Houston Plants

Signature: William McConnell

Date: 7/17/14



Solvay USA Inc.
Houston Plant

CERTIFIED MAIL; RETURN RECEIPT REQUESTED: (7011 2000 0001 4575 1415)

July 14, 2014

Texas Commission on Environmental Quality
Office of Permitting, Remediation and Registration
Air Permits Division, MC-163
P.O. Box 13087
Austin, Texas 78711-3087

Subject: Solvay USA Inc. (CN604514315)
Houston Plant (RN100220581)
Consent Decree (Civil Action No. 2:07CV134 WL)
Air Permit 19282 and PSD-TX-1081
Air Permit 4802 and PSD-TX-1260
Excess Emission Report for SO₂ per 40 CFR 60.7(c)-(d)
Data Assessment Report for SO₂ and O₂ CEMs per 40 CFR Part 60, Appendix F

Dear Sir or Madam:

In accordance with the Consent Decree referenced above, the Solvay USA Inc. (Solvay) formally Rhodia Inc. Houston No. 8 became subject to 40 CFR Part 60 Subpart H, Standards of Performance for Sulfuric Acid Plants on November 19, 2008 and Houston Regen 2 became subject on April 1, 2014. Further, the Consent Decree specifies a SO₂ emission standard that is more stringent than Subpart H and also incorporates an EPA-approved Alternative Monitoring Plan (AMP). As such, the semiannual excess emission report required by 40 CFR 60.7(c)-(d) and the semiannual data assessment report (DAR) required by 40 CFR Part 60 Appendix F, Procedure 1, Section 7 will address compliance with respect to the more stringent CD requirements and the AMP. These reports are attached for the January 1 to June 30, 2014 semiannual reporting period.

The relevant SO₂ standards required by the CD and AMP are as follows:

No. 8 Unit

- Per CD paragraph 11.b.i, emissions of SO₂ are not to exceed a long term limit of 1.70 pounds per ton of 100% sulfuric acid produced (averaged over all operating hours in a rolling 365-day period).
- Per CD paragraph 11.b.ii, emissions of SO₂ are not to exceed a short term limit of 3.00 pounds per ton of 100% sulfuric acid produced (averaged over each rolling 3-hour period). This limit does not apply during periods of startup, shutdown, and malfunction.

Solvay USA Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012

As discussed in the AMP, Solvay uses dual analyzers to determine the conversion factor for converting monitoring data (ppm SO₂ and % O₂) into units of the standard (lbs/ton). This exceeds the "three times daily" minimum discussed in 40 CFR 60.84(b).

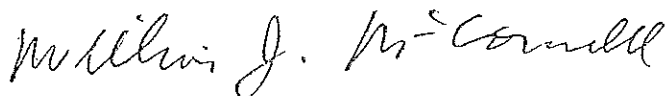
Houston # 2

- Per CD paragraph 11.b.viii, emissions of SO₂ are not to exceed a long term limit of 1.80 pounds per ton of 100% sulfuric acid produced (averaged over all operating hours in a rolling 365-day period).
- Per CD paragraph 11.b.ii, emissions of SO₂ are not to exceed a short term limit of 3.00 pounds per ton of 100% sulfuric acid produced (averaged over each rolling 3-hour period). This limit does not apply during periods of startup, shutdown, and malfunction.

As discussed in the AMP, Solvay uses dual analyzers to determine the conversion factor for converting monitoring data (ppm SO₂) into units of the standard (lbs/ton). This exceeds the "three times daily" minimum discussed in 40 CFR 60.84(b)

If you have any questions or require additional information, please contact Floyd Dickerson at 713-924-1408.

Sincerely,



William McConnell
Plant Manager

Attachment(s)

cc: Air Section Manager, TCEQ Region 12
Mr. Bob Allen, Director, Harris County Pollution Control
Mr. Arturo Blanco, Bureau Chief of Air Quality Control, Health and Human Services Department, City of Houston
Mr. Huimamshu Vyas, EPA Region 6, 1445 Ross Avenue, Suite 1200, Mailcode 6BNAT, Dallas, TX 75202-2733
EPA Region 6, New Source Review Program, 1445 Ross Avenue, Dallas, TX 75202-2733

NSPS Excess Emissions Report
January 1 – June 30, 2014

General Information:

Pollutant:	Sulfur Dioxide (SO ₂)
Reporting period dates:	January 1 – June 30, 2014
Emission Limitation:	Houston #8: 3.00 lbs/ton short-term, 1.70 lbs/ton long-term Houston #2: 3.00 lbs/ton short-term, 1.80 lbs/ton long-term
Address:	8615 Manchester Street, Houston, Texas 77012
Process Unit Description (Source Unit No):	Houston #8 Sulfuric Acid Unit
Monitor Manufacturer and Model No (Stack SO ₂):	Ametek Model 920
Date of Latest CEMS Certification or Audit (Stack):	June 28, 2014
CEMS span values per the AMP (Stack) ⁽¹⁾ :	Dual range: Normal: 0 – 500 ppm SO ₂ SSM: 0 – 3,600 ppm SO ₂
Process Unit Description (Source Unit No):	Houston #2 Sulfuric Acid Unit
Monitor Manufacturer and Model No (Stack SO ₂):	Ametek Model 920
Monitor Manufacturer and Model No (Converter Inlet SO ₂):	Ametek Model 920
Date of Latest CEMS Certification or Audit (Stack):	April 7, 2014
Date of Latest CEMS Certification or Audit (Converter Inlet):	April 9, 2014
CEMS span values per the AMP (Stack) ⁽²⁾ :	Dual range: Normal: 0 – 500 ppm SO ₂ SSM: 0 – 3,600 ppm SO ₂
CEMS span values per the AMP (Converter Inlet) ⁽²⁾ :	Single range: 0 – 15 % SO ₂

Notes:

⁽¹⁾ Refer to EPA approved Alternative Monitoring Plan for the Houston #8.

⁽²⁾ Refer to EPA approved Alternative Monitoring Plan for the Houston #2.

NSPS Excess Emissions Report
July 1 – December 31, 2013

No. 8 Emission data summary – Long-Term Limit

1. Duration of excess emissions (as defined per CD and AMP) in reporting period due to:	
a. Startup/shutdown	0 hours
b. Control equipment problems	0 hours
c. Process problems	0 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total duration of excess emission	0 hours
3. Total duration of excess emissions as percent of total source operating time	0%

No. 8 Emission data summary – Short-Term Limit

1. Duration of excess emissions (as defined per CD and AMP) in reporting period due to:	
a. Startup/shutdown	NA – limit does not apply during startup/shutdown
b. Control equipment problems	0 hours
c. Process problems	0 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total duration of excess emission	0 hours
3. Total duration of excess emissions as percent of total source operating time	0%

NSPS Excess Emissions Report
January 1 – June 30, 2014

Houston #8 Unit Stack SO₂ Analyzer

1. CEMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0 hours
b. Non-Monitor equipment malfunctions	0 hours
c. Quality assurance calibration	98.8 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total CEMS Downtime	98.8 hours ⁽¹⁾
3. Total CEMS Downtime as percent of total source operating time	2.27 %

Houston #8 Unit Stack O₂ Analyzer

1. CEMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0 hours
b. Non-Monitor equipment malfunctions	0 hours
c. Quality assurance calibration	98.8 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total CEMS Downtime	98.8 hours ⁽¹⁾
3. Total CEMS Downtime as percent of total source operating time	2.27 %

⁽¹⁾ The Houston #8 Unit followed procedures specified in an EPA approved Alternative Monitoring Plan (AMP) for CEMS malfunctions. In accordance with the AMP, during CEMS malfunctions lasting more than 24 continuous hours Solvay USA Inc. generally:

- Conducted sampling with hand held monitors when the stack SO₂ and O₂ CEMS malfunctioned.

NSPS Excess Emissions Report
July 1 – December 31, 2013

Houston #2 Emission data summary – Long-Term Limit

1. Duration of excess emissions (as defined per CD and AMP) in reporting period due to:	
a. Startup/shutdown	0 hours
b. Control equipment problems	0 hours
c. Process problems	0 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total duration of excess emission	0 hours
3. Total duration of excess emissions as percent of total source operating time	0%

Houston #2 Emission data summary – Short-Term Limit

1. Duration of excess emissions (as defined per CD and AMP) in reporting period due to:	
a. Startup/shutdown	NA – limit does not apply during startup/shutdown
b. Control equipment problems	0 hours
c. Process problems	0 hours
d. Other known causes	2.55 hours
e. Unknown causes	0 hours
2. Total duration of excess emission	2.55 hours
3. Total duration of excess emissions as percent of total source operating time	3.5%

NSPS Excess Emissions Report
April 1 – June 30, 2014

Houston #2 Stack SO₂ Analyzer

1. CEMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0 hours
b. Non-Monitor equipment malfunctions	0 hours
c. Quality assurance calibration	50.8 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total CEMS Downtime	50.8 hours ⁽¹⁾
3. Total CEMS Downtime as percent of total source operating time	2.33 %

Houston #2 Converter Inlet (Main Gas Blower) Analyzer

1. CEMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0 hours
b. Non-Monitor equipment malfunctions	0 hours
c. Quality assurance calibration	53.0 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total CEMS Downtime	53.0 hours ⁽¹⁾
3. Total CEMS Downtime as percent of total source operating time	2.43 %

- ⁽¹⁾ The Houston #2 followed procedures specified in an EPA approved Alternative Monitoring Plan (AMP) for CEMS malfunctions. In accordance with the AMP, during CEMS malfunctions lasting more than 24 continuous hours Solvay USA Inc. generally:
- Conducted sampling with hand held monitors when the stack SO₂ and converter inlet SO₂ CEMS malfunctioned

NSPS Excess Emissions Report
January 1 – June 30, 2014

Data Assessment Reports (DARs) per 40 CFR Part 60 Appendix F

Analyzer/ Pollutant/Units	Reporting Period	Accuracy Assessment			Any out-of-control periods for Calibration Drift Assessment?
		Type (RATA, CGA, or RAA)	Any Out-of-Control Periods?	Notes	
Houston #8 Stack SO ₂ , ppm	1Q14	RATA	No	Report enclosed	No
	2Q14	CGA	No	Report enclosed	No
Houston #8 Stack O ₂ , %	1Q14	RATA	No	Report enclosed	No
	2Q14	CGA	No	Report enclosed	No
Houston #2 Stack SO ₂ , ppm	1Q14	NA	NA	NA	NA
	2Q14	RATA	No	Report enclosed	No
Houston #2 Converter Inlet SO ₂ , ppm	1Q14	NA	NA	NA	NA
	2Q14	CGA	No	Report enclosed	No

Describe any changes since last quarter in CEMS, process or controls:

There have been no changes in the CEMS, process, or controls since the No. 8 Unit was started on November 19, 2008.

There have been no changes in the CEMS, process, or controls since the Regen 2 was started on April 1, 2014.

***** Certification Statement for Summary Report per 40 CFR 60.7(d)*****

I certify that the information contained in this report is true, accurate, and complete.

William McConnell
 Name of Responsible Official

William J. McConnell
 Signature

Plant Manager
 Title

7/14/14
 Date

ENTECH ENGINEERING INC.

Texas Registered Engineering Firm F-3986
P. O. Box 890746 • Houston, Texas 77289-0746 • (281) 332-3118

AirCO/HG-0697-O/RN100220581/RP

May 07, 2014

Mr. Floyd Dickerson
Environmental Manager
Rhodia Inc.
8615 Manchester
Houston, Texas 77012

SUBJECT: TRANSMITTAL OF ENTECH REPORT NO. ER2014-04-105 ENTITLED "RHODIA INC., HOUSTON PLANT, VIRGIN SULFURIC ACID UNIT NO. 8 (EPN 101) OXYGEN (O₂) AND SULFUR DIOXIDE (SO₂) CONTINUOUS EMISSION MONITORING SYSTEM (CEMS) RELATIVE ACCURACY TEST AUDIT (RATA) (REGULATED ENTITY NO. RN100220581; CUSTOMER REFERENCE NO. CN600125330; TCEQ ACCOUNT ID NO. HG-0697-O; PERMIT NO. 19282)"

Entech Engineering Inc. conducted a RATA on the Virgin Sulfuric Acid Unit No. 8 (EPN 101) O₂ and SO₂ CEMS on March 12, 2014.

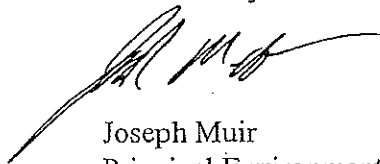
Two copies and one CD of the Entech Engineering final report that documents the findings and results of this program are enclosed. Please note that the results presented in this report only relate to the items tested or the samples as received by Entech's lab; further, this report will not be reproduced, without the written approval of the client. Please contact us at our League City, Texas office if you have any questions or comments concerning the findings of this program.

Sincerely,




W. Banks Miller IV
Environmental Scientist II

Reviewed by:



Joseph Muir
Principal Environmental Scientist

Approved by:



Edward J. Pasternak
Technical Manager

ENTECH ENGINEERING INC.

Texas Registered Engineering Firm F-3986
P. O. Box 890746 • Houston, Texas 77289-0746 • (281) 332-3118

**RHODIA INC.
HOUSTON PLANT
VIRGIN SULFURIC ACID UNIT NO. 8 (EPN 101)
OXYGEN (O₂) AND SULFUR DIOXIDE (SO₂)
CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)
RELATIVE ACCURACY TEST AUDIT (RATA)
(REGULATED ENTITY NO. RN100220581; CUSTOMER REFERENCE NO. CN600125330
TCEQ ACCOUNT ID NO. HG-0697-O; PERMIT NO. 19282)**

**ENTECH REPORT NO. ER2014-04-105
(PAGE 1 OF 56)**

**PREPARED BY

ENTECH ENGINEERING INC.
LEAGUE CITY, TEXAS**

MARCH 12, 2014

**PREPARED FOR

RHODIA INC.
HOUSTON, TEXAS**

**SAMPLING LOCATION

VIRGIN SULFURIC ACID UNIT NO. 8 STACK (EPN 101)
RHODIA INC.
HOUSTON, HARRIS COUNTY, TEXAS**

ENTECH ENGINEERING INC.

*Texas Registered Engineering Firm F-3986
P. O. Box 890746 • Houston, Texas 77289-0746 • (281) 332-3118*

SECTION 1.0 SUMMARY

Entech Engineering Inc. was retained by Rhodia Inc. to conduct an oxygen (O₂) and sulfur dioxide (SO₂) Continuous Emission Monitoring System (CEMS) Relative Accuracy Test Audit (RATA) at Rhodia's Virgin Sulfuric Acid Unit No. 8 in Houston, Harris County, Texas. The objective of this program was to quality assure the continuous performance of the O₂ and SO₂ CEMS according to the specifications of EPA 40 CFR, Part 60, Appendix F.

In this program, the quality assurance test, i.e. RATA was conducted according to the 40CFR60, Appendix F, Section 5.1.1 specifications following the procedures of 40CFR60, Appendix B, Performance Specification 2 and 3 for the SO₂ and O₂ CEMS, respectively. A Performance Specification (PS) test consists of two parts, a Calibration Drift (CD) Determination and a Relative Accuracy (RA) Determination; however, a RATA only requires that the RA determination be conducted. For this program, the RATA was conducted on March 12, 2014 and was coordinated by Mr. Floyd Dickerson of Rhodia Inc. TCEQ was notified of the test, but did not attend.

The Virgin Sulfuric Acid Unit No. 8 is designated in the Texas Commission on Environmental Quality (TCEQ) permit as Emission Point Number (EPN) 101. Its CEMS comprises of a Bovar/Western Research O₂/SO₂ analyzer (Model 920, Serial Number VE-920-8700-2). Flue gas samples are continuously extracted from the stack for analysis on a wet basis. During testing, operational parameters were monitored and recorded by Rhodia personnel at fifteen-minute intervals for demonstration of process conditions.

Results of the O₂ and SO₂ CEMS RATA are presented in Table 1. A comprehensive summary which includes individual test data is presented in Table 2. Test methods and equipment descriptions are presented in Section 2.0 and results and discussions are presented in Section 3.0.

ENTECH ENGINEERING INC.

Texas Registered Engineering Firm F-3986
P. O. Box 890746 • Houston, Texas 77289-0746 • (281) 332-3118

Table 1.
Rhodia Inc.
Houston Plant

Virgin Sulfuric Acid Unit No. 8 (EPN 101)
Oxygen(O₂) and Sulfur Dioxide (SO₂) CEMS Relative Accuracy Test Audit (RATA)
Regulated Entity No. RN100220581; Customer Reference No. CN600125330
TCEQ Account ID No. HG-0697-O; Permit No. 19282
March 12, 2014

Performance Specification Test Parameters	Continuous Emission Monitoring Systems (CEMS)	
	Oxygen (O ₂)	Sulfur Dioxide (SO ₂)
RA Test	Passed	Passed
RA Allowed	+/- 1.0% O ₂	20% (RM) or 10% (STD)
RA	NA	5.89% (RM)

(RM) - Reference Method

(STD) - Emission Standard or Performance Specification Standard

RA - Relative Accuracy Test

NA - Not Applicable



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist
Stack SO₂ Analyzer

Unit Number (Circle One):

2

⑧

Date: 6/28/14

Time: 11:55A

Technician: Rudy Barrera

Serial Number: VE-920-8700-2

Signature: Rudy Barrera

Cylinder ID number	ALM045898		ALM058443			
Date of Certification	7/18/2011		7/19/14			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Protocol 1		EPA Protocol 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	909	1970	909	1970	909	1970
CEM Response value C_m (ppm)	913	2019	927	2023	928	2019
Accuracy A (% or ppm)	.44%	2.48%	1.98%	2.69%	2.09%	2.48%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$

**AIR LIQUIDE**Air Liquide America
Specialty Gases LLC

Scott

COMPLIANCE CLASS
Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No. 4501452424
Document # 42303115-003Customer
RHODIA INC. STOREROOMAIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571ATTN: PAUL BARNETT
8616 MANCHESTER
HOUSTON, TX 77012
US**ANALYTICAL INFORMATION**Gas Type: SO₂This certification was performed according to EPA Traceability Protocol for Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.Cylinder Number: ALM045898
Cylinder Pressure***: 1970 PSIG

Certification Date: 18Jul2011

Exp. Date: 17Jul2014
Batch No: LAP0044990**COMPONENT**SULFUR DIOXIDE *
NITROGEN**CERTIFIED CONCENTRATION (Moles)**

909

PPM

BALANCE

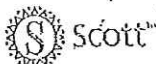
ACCURACY**
+/- 2%**TRACEABILITY**
NIST and VSL*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol procedures, September 1997.**REFERENCE STANDARD**TYPE/SRM NO.
NTRM 1062EXPIRATION DATE
01Jul2016CYLINDER NUMBER
KAL003078CONCENTRATION
975.0 PPMCOMPONENT
SULFUR DIOXIDE**INSTRUMENTATION**INSTRUMENT MODEL/SERIAL
FTIR/MG-08-149DATE LAST CALIBRATED
08Jul2011ANALYTICAL PRINCIPLE
FTIR

Special Notes:

DEW POINT TO F, CGA 660 RDIAORTY005

APPROVED BY:

GARY WRIGHT

**AIR LIQUIDE**Air Liquide America
Specialty Gases LLC**COMPLIANCE CLASS**
Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No.: 4561452424

Customer
RHODIA INC, STOREROOMAIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

Document # 42303115-004

ATTN PAUL BARNETT
8616 MANCHESTER
HOUSTON TX 77012
US**ANALYTICAL INFORMATION**Gas Type: SO₂This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.Cylinder Number: ALM068443
Cylinder Pressure***: 1963 PSIG

Certification Date: 19Jul2011

Exp. Date: 18Jul2014
Batch No: LAP0045081**COMPONENT****CERTIFIED CONCENTRATION (Moles)****ACCURACY****
± 2%**TRACEABILITY**
NIST and VSLSULFUR DIOXIDE *
NITROGEN1,970 PPM
BALANCE

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol procedures, September 1997.

REFERENCE STANDARDTYPE/SRM NO.
NTRM 1664EXPIRATION DATE
02Oct2011CYLINDER NUMBER
ALM043439CONCENTRATION
2402 PPMCOMPONENT
SULFUR DIOXIDE**INSTRUMENTATION**INSTRUMENT/MODEL/SERIAL#
FTIR/MG100-149DATE LAST CALIBRATED
08Jul2011ANALYTICAL PRINCIPLE
FTIR

Special Notes:

DEPT POINT 40 F- CGA 660 RHODIA RTY005
PO# 4501452424 ITEM 150

APPROVED BY:

GARY WRIGHT



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist Stack SO₂ Analyzer

Unit Number (Circle One):

2

⑧

Date: 6/28/14 Time: 11:00 A
Serial Number: VE-920-8700-2

Technician: Rudy Barrera
Signature: [Signature]

Cylinder ID number	ALM036115		ALM002590			
Date of Certification	5/20/11		5/20/11			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Protocol 1		EPA Protocol 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	125	274	125	274	125	274
CEM Response value C_m (ppm)	122	262	122	262	120	260
Accuracy A (% or ppm)	2.45%	4.58%	2.45%	4.58%	4.16%	5.38%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: Interference Free Multi-Component EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No.: 4601416833

Customer
RHODIA INC LAB

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
11426 FAIRMONT PKWY
LA PORTE, TX 77571

Document #: 41649621-006

8616 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.

Cylinder Number: ALM036115
Cylinder Pressure***: 1934 PSIG

Certification Date: 20May2011

Exp. Date: 20May2013
Batch No: LAP0041227

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
SULFUR DIOXIDE *	274 PPM	+/- 1%	Direct NIST and VSL
OXYGEN	15.3 %	+/- 1%	
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 0260	15Jan2012	KAL003774	255.5 PPM	SULFUR DIOXIDE
NTRM 2350	01May2013	K026427	23.50 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#
FTIR/MG-09-149
SERVOMEX/MODEL 244A/701716

DATE LAST CALIBRATED
12May2011
26Apr2011

ANALYTICAL PRINCIPLE
FTIR
PARAMAGNETIC

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

SULFUR DIOXIDE *
Date: 13May2011 Response Unit: PPM
Z1=0.0866 R1=256.6585 T1=276.1549
R2=256.8202 Z2=0.11493 T2=276.4841
Z3=0.15838 T3=276.6497 R3=258.8364
Avg. Concentration: 274.1 PPM

Second Triad Analysis

Date: 20May2011 Response Unit: PPM
Z1=-0.32212 R1=256.5447 T1=274.2461
R2=255.6349 Z2=0.15853 T2=274.5593
Z3=0.33653 T3=274.7581 R3=256.5102
Avg. Concentration: 274.1 PPM

Calibration Curve

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 9.99998E-1
Constants: A = 0.00000E+0
B = 9.99951E-1 C = 3.00000E-6
D = 0.00000E+0 E = 0.00000E+0

OXYGEN

Date: 19May2011 Response Unit: VOLTS
Z1=0.00000 R1=0.94000 T1=0.61100
R2=0.94000 Z2=0.00000 T2=0.61140
Z3=0.00000 T3=0.61140 R3=0.94000
Avg. Concentration: 15.27 %

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = .9999987
Constants: A = .000249421
B = 24.9768807 C =
D = E =

Special Notes

880 CGA DEW POINT 40 F

APPROVED BY:

Ramlen JR

**AIR LIQUIDE**Air Liquide America
Specialty Gases LLC**Scott****RATA CLASS***Dual-Analyzed Calibration Standard*

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: Interference Free Multi-Component EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No.: 4501416833

Customer

RHODIA INC LAB

AIR LIQUIDE AMERICA SPECIALTY GASES LLC Document #: 41649821-005

11426 FAIRMONT PKWY
LA PORTE, TX 775718615 MANCHESTER
HOUSTON TX 77012
US**ANALYTICAL INFORMATION**

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM002590
Cylinder Pressure***: 1936 PSIG

Certification Date: 20May2011

Exp. Date: 20May2013
Batch No: LAP0041265**COMPONENT****CERTIFIED CONCENTRATION (Moles)****ACCURACY******TRACEABILITY**

SULFUR DIOXIDE *

125

PPM

+/- 1%

Direct NIST and VSL

OXYGEN

5.09

%

+/- 1%

NITROGEN

BALANCE

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD**TYPE/SRM NO.****EXPIRATION DATE****CYLINDER NUMBER****CONCENTRATION****COMPONENT**

NTRM 0260

15Jan2012

KAL003774

255.5 PPM

SULFUR DIOXIDE

NTRM 2350

01May2013

K026427

23.50 %

OXYGEN

INSTRUMENTATION**INSTRUMENT/MODEL/SERIAL#****DATE LAST CALIBRATED****ANALYTICAL PRINCIPLE**

FTIR//K-G-08-149

12May2011

FTIR

SERVOMEX/MODEL 244A/701/716

25Apr2011

PARAMAGNETIC

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis**Second Triad Analysis****Calibration Curve****SULFUR DIOXIDE ***Date: 13May2011 Response Unit: PPM
Z1=0.01023 R1=253.7089 T1=123.9645
R2=253.7350 Z2=0.07108 T2=124.0039
Z3=0.09222 T3=124.1033 R3=253.8609
Avg. Concentration: 124.8 PPMDate: 20May2011 Response Unit: PPM
Z1=0.00195 R1=253.7032 T1=123.9691
R2=253.8925 Z2=0.10441 T2=124.0436
Z3=0.12747 T3=124.0462 R3=254.0720
Avg. Concentration: 124.8 PPMConcentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.99985E-1
Constants: A = 0.00000E+0
B = 9.94451E-1 C = 0.00000E+0
D = 0.00000E+0 E = 0.00000E+0**OXYGEN**Date: 19May2011 Response Unit: VOLTS
Z1=0.00000 R1=0.94000 T1=0.20370
R2=0.94000 Z2=0.00000 T2=0.20400
Z3=0.00000 T3=0.20400 R3=0.94000
Avg. Concentration: 5.093 %Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999997
Constants: A = 0.00249421
B = 24.9768607 C =
D = E =

Special Notes:

660 CGA DEW POINT 40 F

APPROVED BY:

Ramien JR



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist Stack SO₂ Analyzer

Unit Number (Circle One):

2

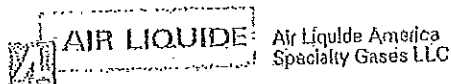
⑧

Date: 6/28/14 Time: 11:00 A
Serial Number: VE-920-8700-2

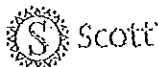
Technician: Ricky Barrera
Signature: [Signature]

Cylinder ID number	ALM036115		ALM002590			
Date of Certification	5/20/11		5/20/11			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Protocol 1		EPA Protocol 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	5.09	15.3	5.09	15.3	5.09	15.3
CEM Response value C_m (ppm)	4.87	15.5	4.89	15.5	4.89	15.6
Accuracy A (% or ppm)	4.32%	1.29%	3.92%	1.29%	3.92%	1.92%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77671

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: Interference Free Multi-Component EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No.: 4601416833

Customer
RHODIA INC LAB

AIR LIQUIDE AMERICA SPECIALTY GASES LLC Document #: 41649621-006
11426 FAIRMONT PKWY
LA PORTE, TX 77671

8616 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.

Cylinder Number: ALM036115
Cylinder Pressure***: 1934 PSIG

Certification Date: 20May2011

Exp. Date: 20May2013
Batch No: LAP0041227

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
SULFUR DIOXIDE *	274	PPM	+/- 1%	Direct NIST and VSL
OXYGEN	15.3	%	+/- 1%	
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 0260	15Jan2012	KAL003774	255.5 PPM	SULFUR DIOXIDE
NTRM 2360	01May2013	K026427	23.60 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#
FTIR/MG-09-149
SERVOMEX/MODEL 244A/701/716

DATE LAST CALIBRATED
12May2011
26Apr2011

ANALYTICAL PRINCIPLE
FTIR
PARAMAGNETIC

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

Second Triad Analysis

Calibration Curve

SULFUR DIOXIDE *

Date: 13May2011 Response Unit: PPM
Z1=-0.06656 R1=256.6585 T1=276.1549
R2=256.8202 Z2=0.11493 T2=276.4041
Z3=0.15836 T3=276.6497 R3=256.8364
Avg. Concentration: 274.1 PPM

Date: 20May2011 Response Unit: PPM
Z1=-0.32212 R1=256.5447 T1=274.2461
R2=255.6349 Z2=0.16863 T2=274.5593
Z3=0.33653 T3=274.7681 R3=256.6102
Avg. Concentration: 274.1 PPM

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 0.99998E-1
Constants: A = 0.00000E+0
B = 9.99951E-1 C = 3.00000E-6
D = 0.00000E+0 E = 0.00000E+0

OXYGEN

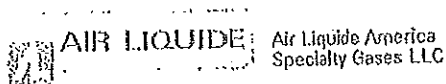
Date: 19May2011 Response Unit: VOLTS
Z1=0.00000 R1=0.94000 T1=0.61100
R2=0.94000 Z2=0.00000 T2=0.61140
Z3=0.00000 T3=0.61140 R3=0.94000
Avg. Concentration: 15.27 %

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 0.999987
Constants: A = 0.000249421
B = 24.9768807 C =
D = E =

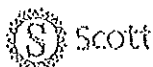
Special Notes: 680 CGA DEW POINT 40 F

APPROVED BY:

Rennan JR



Air Liquide America
Specialty Gases LLC



RATA CLASS

Dual-Analyzed Calibration Standard

11426 FAIRMONT PKWY, LA PORTE, TX 77571

Phone: 800-248-1427

Fax: 281-474-8419

CERTIFICATE OF ACCURACY: Interference Free Multi-Component EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A32011

P.O. No.: 4501416833

Customer
RHODIA INC LAB

AIR LIQUIDE AMERICA SPECIALTY GASES LLC Document #: 41649621-005
11426 FAIRMONT PKWY
LA PORTE, TX 77571

8815 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards;
Procedure G-1; September, 1997.

Cylinder Number: ALM002590
Cylinder Pressure***: 1936 PSIG

Certification Date: 20May2011

Exp. Date: 20May2013
Batch No: LAP0041285

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
SULFUR DIOXIDE *	125 PPM	+/- 1%	Direct NIST and VSL
OXYGEN	5.09 %	+/- 1%	
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 0280	15Jan2012	KAL003774	255.5 PPM	SULFUR DIOXIDE
NTRM 2380	01May2013	K026427	23.60 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#
FTIR/MG-09-149
SERVOMEX/MODEL 244A/701716

DATE LAST CALIBRATED
12May2011
25Apr2011

ANALYTICAL PRINCIPLE
FTIR
PARAMAGNETIC

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

SULFUR DIOXIDE *			
Date: 13May2011	Response Unit: PPM		
Z1=0.01023	R1=253.7089	T1=123.9545	
R2=253.7350	Z2=0.07108	T2=124.0038	
Z3=0.09222	T3=124.1083	R3=253.6609	
Avg. Concentration:	124.8	PPM	

Second Triad Analysis

Date: 20May2011			
Response Unit: PPM			
Z1=0.00195	R1=253.7032	T1=123.9691	
R2=253.8925	Z2=0.10441	T2=124.0436	
Z3=0.12747	T3=124.0462	R3=254.0720	
Avg. Concentration:	124.8	PPM	

Calibration Curve

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 0.99985E-1
Constants: A = 0.00000E+0
B = 0.04451E-1 C = 0.00000E+0
D = 0.00000E+0 E = 0.00000E+0

OXYGEN

Date: 19May2011	Response Unit: VOLTS		
Z1=0.00000	R1=0.94000	T1=0.20370	
R2=0.94000	Z2=0.00000	T2=0.20400	
Z3=0.00000	T3=0.20400	R3=0.94000	
Avg. Concentration:	5.093	%	

Concentration = A + Bx + Cx² + Dx³ + Ex⁴
r = 0.999987
Constants: A = .000249421
B = 24.9768607 C =
D = E =

Special Notes:

660 CGA DEW POINT 40 F

APPROVED BY:

Ranlen JR

**RELATIVE ACCURACY TEST AUDIT REPORT
SOLVAY USA INC.
SULFURIC ACID REGENERATION UNIT NO. 2
HOUSTON, TEXAS
TEST DATE: 31 MARCH AND 2 APRIL 2014**

Prepared for:

SOLVAY USA INC.
8715 Manchester Street
Houston, TX 77012

Prepared by:

WESTON SOLUTIONS, INC.
1400 Weston Way
West Chester, Pennsylvania 19380

June 2014

W.O. No. 12143.075.009

1. TEST PROGRAM SUMMARY

1.1 INTRODUCTION

The Solvay USA Inc. (SOLVAY) Houston, TX facility is required to perform annual continuous emissions monitoring system (CEMS) certifications on its Sulfuric Acid Regeneration Unit No. 2 scrubber stack two range CEMS and the main gas blower CEMS. This report provides a detailed description of the monitoring procedures that were used to demonstrate compliance for each CEMS certification.

Section 1 provides a summary of the overall test program and test parameters. Section 2 provides a summary of the Relative Accuracy Test Audit (RATA) and 7-day drift test results for each CEMS tested. A description of process operations, test locations, and sampling procedures are provided in Sections 3 through 5, respectively.

Appendices A through E provide Unit 2 CEMS data and process operations data, reference method CEMS data, example calculations, equipment calibration records, and project participants, respectively.

1.2 SAMPLE PROGRAM MATRIX

Table 1-1 provides a summary of test parameters and test procedures. All CEMS RATA testing was performed on 31 March and 2 April 2014.

Table 1-1

Sample Program Matrix

Sample Parameter	Sample Location	Test Method	Number of Tests	Comments
Sulfur Dioxide	Stack CEMS	EPA Method 6C	10	ppmv and % relative accuracy
Sulfur Dioxide	Main Gas Blower CEMS	Performance Specification 2 Alternative Method Section 16.2	2 x 3 ¹	% SO ₂ and % difference

1. Two reference gas cylinders were used, each cylinder challenged the SO₂ analyzer with the known SO₂ concentration three separate times.

2. RESULTS AND DISCUSSION

The CEMS certification results are shown in Table 2-1. The test results for relative accuracy met the performance specification criteria for each CEMS tested. The SOLVAY stack SO₂ CEMS operates at two ranges, 0-500 ppm and 0-3,600 ppm. One RATA test was used to evaluate both CEMS ranges. Ten reference method test runs were conducted at the stack CEMS location. The relative accuracy was based upon nine of the ten runs. Run Nos. 1 through 9 were used in the RATA calculations. Run No. 10 was not used in the RATA calculations. All ten RATA test runs are reported in the appendices.

The test results for 7-day calibration drift represent the greater value of zero and span error percentages. These test parameters also met the performance specification criteria for each CEMS tested. Any differences between the calculated results shown in the appendices and the reported results in the summary table are due to rounding the results for presentation.

Appendix B provides detailed summaries of the relative accuracy and performance specification testing.

Table 2-1

Summary of CEMS Performance Specification Test Results

Stack Analyzers	Relative Accuracy		7-Day Calibration Drift		7 – Day Zero Drift	
	Performance Required (%)	Performance Demonstrated (%)	Performance Required (%)	Performance Demonstrated (%)	Performance Required (%)	Performance Demonstrated (%)
SO ₂	20	4.7 (Low) 5.5 (High)	≤ 2.5	0.8 (Low) 0.2 (High)	≤ 2.5	0.2 (Low) 0.03 (High)

Converter Analyzer (Main Gas Blower)	Relative Accuracy (Alternative Method 16.2)		7-Day Calibration Drift		7 – Day Zero Drift	
	Performance Required (%)	Performance Demonstrated (%)	Performance Required (%)	Performance Demonstrated (%)	Performance Required (%)	Performance Demonstrated (%)
SO ₂	15	4.2 (low conc.) 2.7 (mid conc.)	≤ 2.5	0.7	≤ 2.5	1.3



SOLVAY

asking more from chemistry®

*Solvay USA Inc.
Houston Plant*

AC/AC/EN

110000460901
T90
wly
RECEIVE
MAY 10 2014

**Air/Toxics & Inspection
Coordination Branch
6EN-A**

CERTIFIED MAIL: Return Receipt Requested (7011 2000 0001 4575 1316)

June 6, 2014

U.S. Environmental Protection Agency
Fines and Penalties
Cincinnati Finance Center
PO Box 979077
St. Louis, MO 63197-9000

Re: Solvay USA Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012
Consent Agreement and Final Order in the matter of Solvay USA Inc.
Docket No. CAA-06-2014-3314

Dear Sir or Madame:

Please find check number 0005006681 for \$31,500.00 to cover the penalty assessed in Consent Agreement and Final Order in the matter of Solvay USA Inc., Docket No. CAA-06-2014-3314.

If you have any questions, please do not hesitate to contact me at (713) 924-1408.


Sincerely,



W. F. Dickerson
Environmental Manager

attachment

cc: Carlos Flores
Enforcement Officer (6EN-AT)
Toxics Enforcement Section
Compliance Assurance and Enforcement Division
U.S EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733



Solvay USA Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012



Solvay USA Inc.
CN 1120
Cranbury, NJ 08512
Tel: Help Desk, 1-877-463-7645

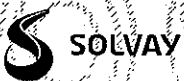
US ENVIRONMENTAL PROTECTION AGENCY
FINES & PENALTIES FIFRA 0620120343
PO Box 979077
SAINT LOUIS, MO, 63197-9000

Page 1 of 1
Check : 0005006681
Date : 06/03/2014

1008917 / US ENVIRONMENTAL PROTECTION AGENCY

Invoice Number Remarks/Description	Invoice Date	PO number	Gross amount	Discount Amount	Net amount
CR050714	05/07/2014	1900007801	31,500.00	0.00	31,500.00
Total :			31,500.00	0.00	31,500.00

THE ORIGINAL DOCUMENT HAS A WHITE REFLECTIVE WATERMARK ON THE BACK. HOLD AT AN ANGLE TO VIEW. DO NOT CASH IF NOT PRESENT.



HSBC BANK, USA
ONE HSBC CENTER
BUFFALO NY 14203

0005006681
DATE: 06/03/2014

Solvay USA Inc.
CN 1120
Cranbury, NJ 08512

50-682
213

***31,500.00
US DOLLARS

PAY TO THE ORDER OF- US ENVIRONMENTAL PROTECTION AGENCY

THIRTY-ONE THOUSAND FIVE HUNDRED USD ***

US ENVIRONMENTAL PROTECTION AGENCY
FINES & PENALTIES FIFRA 0620120343
PO Box 979077
SAINT LOUIS, MO, 63197-9000

Solvay USA Inc.
Authorized signature

CAA 06-2014-3314

0005006681 021306822 797302697

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 6
DALLAS, TEXAS

FILED

2014 MAY 21 PM 2:35

REGIONAL HEARING CLERK
EPA REGION VI

IN THE MATTER OF:

SOLVAY USA INC.

HOUSTON, TEXAS

§
§
§
§
§
§
§
§

DOCKET NO. CAA 06-2014-3314

COMPLAINT AND
CONSENT AGREEMENT AND
FINAL ORDER

COMPLAINT AND
CONSENT AGREEMENT AND FINAL ORDER

The Director, Compliance Assurance and Enforcement Division, United States Environmental Protection Agency, Region 6 ("EPA") ("Complainant"), and SOLVAY USA Inc. located in Houston, Texas ("Respondent" and "SOLVAY"), in the above referenced action, have agreed to resolve this matter, through issuance of this Complaint and Consent Agreement and Final Order ("Complaint" and "CAFO").

I.
PRELIMINARY STATEMENT

1. This proceeding is the assessment of civil penalties pursuant to Section 113(d) of the Clean Air Act, as amended (CAA or the Act), 42 U.S.C. § 7413(d), and for additional terms of settlement as agreed to by Respondent. This proceeding was instituted by the issuance of a Complaint and Notice of Opportunity for Hearing ("Complaint") incorporated herein, and is simultaneously concluded by the issuance of this CAFO against Respondent pursuant to 40 C.F.R. §§ 22.13(b), 22.18(b)(2), 22.18(b)(3), and 22.34.

2. This Complaint alleges that Respondent has violated the provisions governing Chemical Accident Prevention, and specifically the requirements to maintain training records of

employees and develop appropriate operating procedures and annually certify them, which is required by 40 C.F.R. Part 68 and Section 112(r) of the Act, 42 U.S.C. § 7412(r), at its Houston, Texas facility. Furthermore, this CAFO serves as notice pursuant to Section 113(d)(2)(A) of the Act, 42 U.S.C. § 7413(d)(2)(A), of EPA's intent to issue an order assessing penalties for this violation.

3. For purposes of this proceeding, Respondent admits the jurisdictional allegations of this Complaint; however, Respondent neither admits nor denies the specific factual allegations contained in this Complaint.

4. Respondent waives any right to contest the allegations in the CAFO and its right to appeal the Final Order set forth herein, and waives all defenses which have been raised or could have been raised to the claims set forth in the CAFO.

5. Compliance with all the terms and conditions of this CAFO shall only resolve Respondent's liability for federal civil penalties for the violations alleged in the CAFO.

6. Respondent consents to the issuance of this CAFO hereinafter recited, consents to the assessment and payment of the stated civil penalty in the amount and by the method set out in this CAFO.

7. Respondent shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, or claim-splitting for violations not alleged in this Complaint.

8. Nothing in this CAFO shall be construed to prevent or limit EPA's civil and criminal authorities, or that of other Federal, State, or local agencies or departments to obtain penalties or injunctive relief under other Federal, State, or local laws or regulations.

9. Respondent hereby certifies that as of the date of execution of this CAFO, the Facility has corrected the violation alleged herein, and is now, to the best of its knowledge, in compliance with all the requirements of 40 C.F.R. Part 68 and Section 112(r) of the Act, 42 U.S.C. § 7412(r).

10. Respondent represents that the undersigned representative is fully authorized by the Party whom he or she represents to enter into the terms and conditions of this CAFO, to execute this CAFO, and to legally bind the Respondent to the terms and conditions of this CAFO.

11. Respondent agrees that the provisions of this CAFO shall be binding on its officers, directors, employees, agents, servants, authorized representatives, successors, and assigns, but not limited to, subsequent purchasers. Nothing in the previous sentence shall adversely affect any right of EPA under applicable law to assert successor or assignee liability against Respondent's successor or assignee, even if not owned in whole or in part, directly or indirectly, by Respondent.

II. STATUTORY AND REGULATORY BACKGROUND

12. Pursuant to CAA § 112(r)(7), 42 U.S.C. § 7412(r)(7), the Administrator is authorized to promulgate release prevention, detection, and correction requirements.

13. On June 20, 1996, the EPA promulgated a final rule known as the Chemical Accident Prevention Provisions, 40 C.F.R. Part 68, which implements Section 112(r)(7), 42 U.S.C. § 7412(r)(7), of the Act. These regulations require owners and operators of stationary sources, as defined in 40 C.F.R. § 68.3, that have more than a threshold quantity of a regulated

substance in a process no later than the latter of June 21, 1999, or the date on which a regulated substance is first present above the threshold quantity in a process, to develop, implement, and submit a RMP.

14. The regulations in 40 C.F.R. Part 68 set forth the requirements for the RMP that must be followed at each applicable stationary source, including the requirements regarding operating procedures and training.

15. Pursuant to 40 C.F.R. § 68.69(a)(3)(iii-v), “(a) The owner or operator shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements... (3) Safety and health considerations: ... (iii) Control measures to be taken if physical contact or airborne exposure occurs; (iv) Quality control for raw materials and control of hazardous chemical inventory levels; and, (v) Any special or unique hazards.”

16. Pursuant to 40 C.F.R. § 68.69(c), “The operating procedures shall be reviewed as often as necessary to assure they reflect current operating practice, including changes that result from changes in process chemicals, technology, and equipment, and changes to stationary sources. The owner and operator shall certify annually that these operating procedures are current and accurate.”

17. Pursuant to 40 C.F.R. § 68.54(a),(b): “(a) The owner or operator shall ensure that each employee presently operating a process, and each employee newly assigned to a covered process have been trained or tested competent in the operating procedures provide in § 68.52 that pertain to their duties. For those employees already operating a process on June 21, 1999, the owner or operator may certify in writing that the employee has the required knowledge, skills,

and abilities to safely carry out the duties and responsibilities as provided in the operating procedures. (b) Refresher training. Refresher training shall be provided at least every three years, and more often if necessary, to each employee operating a process to ensure that the employee understands and adheres to the current operating procedures of the process. The owner or operator, in consultation with the employees operating the process, shall determine the appropriate frequency of refresher training.”

18. Pursuant to 40 C.F.R. § 68.71(c), “*Training documentation*. The owner or operator shall ascertain that each employee involved in operating a process has received and understood the training required by this paragraph. The owner or operator shall prepare a record which contains the identity of the employee, the date of training, and the means used to verify that the employee understood the training.”

19. “Owner or operator” shall mean any person who owns, leases, operates, controls, or supervises a stationary source. 42 U.S.C. § 7412(a)(9).

20. “Stationary source” shall mean any buildings, structures, equipment, installations, or substance emitting stationary activities which belong to the same industrial group, which are located on one or more contiguous properties, which are under the control of the same person (or persons under common control), and from which an accidental release may occur. The term stationary source does not apply to transportation, including storage incident to transportation, of any regulated substance or any other extremely hazardous substance under the provisions of this part. A stationary source includes transportation containers used for storage not incident to transportation and transportation containers connected to equipment at a stationary source for loading or unloading. 40 C.F.R. § 68.3; CAA § 112(r)(2)(C).

21. "Threshold quantity" shall mean the quantity specified for regulated substances pursuant to Section 112(r)(5) of the Act, as amended in 40 C.F.R. § 68.130, Table 1, and determined to be present at a stationary source, as specified in 40 C.F.R. § 68.115. 40 C.F.R. § 68.3.

22. "Regulated substance" shall mean any substance listed pursuant to Section 112(r)(3) of the Act, as amended in 40 C.F.R. § 68.130. 40 C.F.R. § 68.3.

23. "Process" shall mean any activity involving a regulated substance including any use, storage, manufacturing, handling, or on-site movement of such substances, or combination of these activities. For the purposes of this definition, any group of vessels that are interconnected, or separate vessels that are located such that a regulated substance could be involved in a potential release, shall be considered a single process. 40 C.F.R. § 68.3.

III. FINDINGS OF FACT AND CONCLUSIONS OF LAW

24. Respondent is incorporated in the state of Delaware and is authorized to do business in the State of Texas.

25. Respondent is a "person" as that term is defined in Section 302(e) of the Act, 42 U.S.C. § 7602(e), and within the meaning of Section 113(d) of the Act, 42 U.S.C. § 7413(d).

26. At all times relevant to this CAFO, Respondent owns and operates a chemical manufacturing facility located at 8615 Manchester Street, Houston, Texas 77012 ("Facility").

27. Respondent is the owner and operator of a stationary source producing, handling, or storing substances listed pursuant to CAA § 112(r)(3) or extremely hazardous substances, as published and listed in the Emergency Planning and Community Right-to-know Act of 1986 [42 U.S.C.A. § 11001 et seq.].

28. The Chemical Accident Prevention Provisions, 40 C.F.R. Part 68, apply to owners and operators of stationary sources that have more than a threshold quantity in a process of a substance listed pursuant to CAA § 112(r)(3).

29. On April 22-24, 2013, EPA conducted on onsite CAA Partial Compliance Evaluation at the Facility to verify compliance with 40 C.F.R. Part 68.

30. The violations were discovered from a review of the documents obtained during the inspection.

IV. VIOLATIONS

Count 1: Failure to certify annually that the required operating procedures are current and accurate (40 C.F.R. § 68.69(c)).

31. Respondent is subject to the Risk Management Plan (“RMP”) regulations enumerated in 40 C.F.R. Part 68.

32. 40 C.F.R. § 68.69(c) requires that operating procedures shall be reviewed as often as necessary to assure that they reflect current operating practice, including changes that result from changes in process chemicals, technology, equipment, and changes to stationary sources. The owner or operator shall certify annually that these operating procedures are current and accurate.

33. From 2008 to present, the Respondent has failed on one instance to annually certify that operating procedures were current and accurate for Unit No. 8 located at the facility.

34. Through its failure to annually certify that required operating procedures were current and accurate, Respondent has violated 40 C.F.R. §68.69(c).

Count 2: Failure to develop written operating procedures that provide clear instructions that include the required safety and health considerations

35. EPA realleges and hereby incorporates by reference Paragraphs 1-34 as referenced above.

36. 40 C.F.R. § 68.69(a)(3)(iii-v) requires, in relevant part, that the owner or operator of a facility shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements... (3) Safety and health considerations: ... (iii) Control measures to be taken if physical contact or airborne exposure occurs; (iv) Quality control for raw materials and control of hazardous chemical inventory levels; and, (v) Any special or unique hazards.

37. Through a review of Respondent's operating procedures for multiple units, it was observed that the procedures lacked information regarding the control measures to be taken if physical contact or airborne exposure occurs, quality control for raw materials and control of hazardous chemical inventory levels, and any special or unique hazards.

38. Through its failure to include the information listed in Paragraph 37 in its operating procedures, Respondent has violated 40 C.F.R. § 68.69(a)(3)(iii-v).

Count 3: Failure to provide proper training documentation regarding required initial and refresher training.

39. EPA realleges and hereby incorporates by reference Paragraphs 1-38 as referenced above.

40. 40 C.F.R. § 68.71(c) requires the owner or operating of a facility to ascertain that each employee involved in operating a process has received and understood the training required by 40 C.F.R. Part 68. Further the owner or operator shall prepare a record which contains the

identity of the employee, the date of training, and the means used to verify that the employee understood the training.

41. After review of the training records provided for operations in the Regeneration 2, Unit No. 8, and Logistics area of the facility, it was noted that documents provided lacked the information required to determine whether each entry is an initial training or refresher training. Means to verify that the employees understood the training was not consistent, e.g. some documents were signed and acknowledged by the employee being trained, while others were not.

42. Through its failure to include the information listed in Paragraph 40 of this complaint in its required training documentation, respondent has violated 40 C.F.R. § 68.71(c).

V.

CIVIL PENALTY AND TERMS OF SETTLEMENT

43. For the reasons set forth above, Respondent has agreed to pay a civil penalty which has been determined in accordance with Section 113(b)(2) of the Act, 42 U.S.C. § 7413(b)(2), which authorizes EPA to assess a civil penalty of up to twenty-five thousand dollars (\$25,000) per day for each violation of the CAA.¹

44. Upon consideration of the entire record herein, including the Findings of Fact and Conclusions of Law, which are hereby adopted and made a part hereof, and upon consideration of the size of the business, the economic impact of the penalty on the business, the violator's full compliance history and good faith efforts to comply, the duration of the violation, payment by the violator of penalties previously assessed for the same violation, the economic benefit of

¹ The Civil Penalty Inflation Adjustment Act of 1990, 28 U.S.C. § 2461, as amended by 31 U.S.C. § 3701 provides for increases in the statutory penalty provisions (\$25,000) cited in the Clean Air Act Stationary Source Civil Penalty Policy dated October 25, 1991 (CAA Penalty Policy). It provides for up to \$25,000 per day of violation for violations occurring on or before January 30, 1997; up to \$27,500 per day for each violation occurring after January 30, 1997 through March 15, 2004; up to \$32,500 per day for each violation occurring after March 15, 2004 through January 12, 2009; and up to \$37,500 per day for each such violation occurring after January 12, 2009.

noncompliance, the seriousness of the violation, specific facts and equities, litigation risks, and other factors as justice may require, it is ORDERED that Respondent be assessed a civil penalty in the amount of \$31,500.

45. Within thirty (30) days of this fully executed CAFO, Respondent shall pay \$31,500 by cashier's check, certified check, or wire transfer made payable to "Treasurer, United States of America, EPA - Region 6." Payment shall be remitted in one of five (5) ways: regular U.S. Postal Service mail, to include certified mail; overnight mail; wire transfer; Automated Clearinghouse for receiving US currency; or On Line Payment. For regular U.S. Postal Service mail, U.S. Postal Service certified mail, or U.S. Postal Service express mail, the check(s) should be remitted to:

U.S. Environmental Protection Agency
Fines and Penalties
Cincinnati Finance Center
PO Box 979077
St. Louis, MO 63197-9000

For overnight mail (non-U.S. Postal Service, e.g. FedEx), the check(s) should be remitted to:

U.S. Bank
Government Lockbox 979077
U.S. EPA Fines & Penalties
1005 Convention Plaza
SL-MO-C2-GL
St. Louis, MO 63101
Contact: Natalie Pearson
314-418-4087

For wire transfer, the payment should be remitted to:

Federal Reserve Bank of New York
ABA: 021030004
Account Number: 68010727
SWIFT address: FRNYUS33
33 Liberty Street
New York, NY 10045

Field Tag 4200 of the Fedwire message should read:
"D 68010727 Environmental Protection Agency"

For Automated Clearinghouse (also known as REX or remittance express):

U.S. Treasury REX / Cashlink ACH Receiver
ABA: 051036706
Account Number: 310006, Environmental Protection Agency
CTX Format Transaction Code 22 – checking
Physical location of U.S. Treasury facility:
5700 Rivertech Court
Riverdale, MD 20737
Contact – Jesse White (301) 887-6548

For On Line Payment:

WWW.PAY.GOV

Enter sfo 1.1 in search field
Open form and complete required fields.

PLEASE
NOTE:

The docket number CAA 06-2014-3314 shall be clearly typed on the check to ensure proper credit. The payment shall also be accompanied by a transmittal letter and shall reference Respondent's name and address, the case name, and docket number of the administrative complaint and CAFO. Respondent's adherence to this request will ensure proper credit is given when penalties are received for the Region. Respondent shall also send a simultaneous notice of such payment, including a copy of the money order, or check, and the transmittal letter to the following:

Carlos Flores
Enforcement Officer (6EN-AT)
Toxics Enforcement Section
Compliance Assurance and Enforcement Division
U.S. EPA, Region 6
1445 Ross Avenue Suite 1200
Dallas, Texas 75202-2733;

Lorena Vaughn
Region 6 Hearing Clerk (6RC-D)
U.S. EPA Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

46. Respondent agrees not to claim, or attempt to claim, a federal income tax deduction or credit covering all or any part of the civil penalty paid to the United States Treasurer.

47. Pursuant to 31 U.S.C. § 3717 and 40 C.F.R. § 13.11, unless otherwise prohibited by law, EPA will assess interest and late payment penalties on outstanding debts owed to the United States and a charge to cover the costs of processing and handling a delinquent claim. Interest on the civil penalty assessed in this CAFO will begin to accrue thirty (30) days after the effective date of the CAFO and will be recovered by EPA on any amount of the civil penalty that is not paid by the respective due date. Interest will be assessed at the rate of the United States Treasury tax and loan rate in accordance with 40 C.F.R. § 13.11(a). Moreover, the costs of the Agency's administrative handling of overdue debts will be charged and assessed monthly throughout the period the debt is overdue. See 40 C.F.R. § 13.11(b).

48. EPA will also assess a fifteen dollar (\$15.00) administrative handling charge for administrative costs on unpaid penalties for the first thirty (30) day period after the payment is due and an additional fifteen dollars (\$15.00) for each subsequent thirty (30) day period that the penalty remains unpaid. In addition, a penalty charge of up to six percent per year will be assessed monthly on any portion of the debt which remains delinquent more than ninety (90) days. See 40 C.F.R. § 13.11(c). Should a penalty charge on the debt be required, it shall accrue from the first day payment is delinquent. See 31 C.F.R. § 901.9(d). Other penalties for failure to make a payment may also apply.

49. Pursuant to Section 113(d)(5) of the Act, 42 U.S.C. § 7413(d)(5), any person who fails to pay on a timely basis, a civil penalty ordered or assessed under this section shall be required to pay, in addition to such penalty and interest, the United States enforcement expenses, including but not limited to, attorneys fees and costs incurred by the United States for collection proceedings, and a quarterly nonpayment penalty for each quarter during which such failure to pay persists. Such nonpayment penalty shall be ten (10) percent of the aggregate amount of such person's outstanding penalties and nonpayment penalties accrued as of the beginning of each quarter.

50. This CAFO shall not relieve the Respondent of its obligation to comply with all applicable provisions of federal, state or local law, nor shall it be construed to be a ruling on, or determination of, any issue related to any federal, state or local permit, nor shall it be construed to constitute EPA approval of any equipment or technology installed by the Respondent in connection with any additional settlement terms undertaken pursuant to this CAFO. Nothing in this CAFO shall be construed to prohibit or prevent the federal, state, or local government from developing, implementing, and enforcing more stringent standards through rulemaking, the permit process, or as otherwise authorized or required.

51. This document is a "Final Order" as that term is defined in the CAA Penalty Policy for the purpose of demonstrating a history of "prior such violations."

VI.
RETENTION OF ENFORCEMENT RIGHTS

52. EPA does not waive any rights or remedies available to EPA for any violations by the Respondent of federal laws, regulations, statutes, or permitting programs.

53. Nothing in this CAFO shall relieve Respondent of the duty to comply with all applicable provisions of the CAA.

VII.
COSTS

54. Each party shall bear its own costs and attorneys fees.

In re Solvay USA, Inc.

Docket No. CAA-06-2014-~~XXXX~~

3314

IT IS SO AGREED:

FOR THE RESPONDENT:

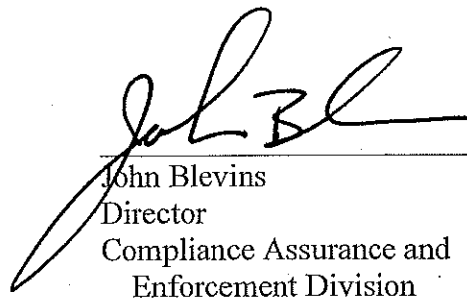
Date: 4/30/2014



SOLVAY USA INC.

FOR THE COMPLAINANT:

Date: 5/20/14



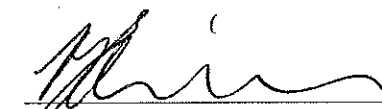
John Blevins
Director
Compliance Assurance and
Enforcement Division

FINAL ORDER

Pursuant to Section 113(d) of the Clean Air Act (Act), 42 U.S.C. § 7413(d), and the Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties, 40 C.F.R. Part 22, the foregoing Consent Agreement is hereby ratified. This Final Order shall not in any case affect the right of EPA or the United States to pursue appropriate injunctive or other equitable relief or criminal sanctions for any violations of law. This Final Order shall resolve only those causes of action alleged in this CAFO. Nothing in this Final Order shall be construed to waive, extinguish, or otherwise affect Respondent's (or its officers, agents, servants, employees, successors, or assigns) obligation to comply with all applicable federal, state, and local statutes and regulations, including the regulations that were the subject of this action. The Respondent is ordered to comply with the terms of settlement as set forth in the Consent Agreement, including the assessment of civil penalties. In accordance with 40 C.F.R. Part 22.31(b), this Final Order shall become effective upon filing with the Regional Hearing Clerk.

Dated

5/20/14



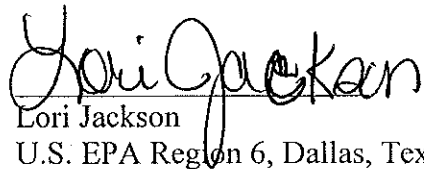
Regional Judicial Officer
U.S. EPA, Region 6

CERTIFICATE OF SERVICE

I hereby certify that on the 21 day of May, 2014, the original and one copy of the foregoing Complaint and Consent Agreement and Final Order ("Complaint and CAFO") was hand delivered to the Regional Hearing Clerk, U.S. EPA - Region 6, 1445 Ross Avenue, Suite 1200, Dallas, Texas 75202-2733, and a true and correct copy was delivered to the following individual(s) by the method indicated below:

CERTIFIED MAIL - RETURN RECEIPT REQUESTED: 70073020000015228021

William McConnell
Plant Manager
SOLVAY USA, INC. Houston Facility
8615 Manchester Street
Houston, Texas 77012


Lori Jackson
U.S. EPA Region 6, Dallas, Texas

4/4/890 v3 A/AI/EN

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GEN-A
RECEIVE



Eco Services Operations LLC
Houston Plant

JAN 16 2015

Air Toxics & Inspection
Coordination Branch
6EN-A

CERTIFIED MAIL: Return Receipt Requested (7011 2970 0000 3521 0602)

January 12, 2015

Mr. Jeff Robinson
Chief, Air Permits Section (6PD-R)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Eco Services Operations LLC Benzene NESHAP, Subpart FF, Quarterly Report
October 1, 2014 to December 31, 2014
EPA ID No.: TXD008099079

Dear Mr. Robinson:

Eco Services Operations LLC, formally Solvay USA Inc., in Houston, Texas owns and operates a Sulfuric Acid Regeneration Plant. In addition to the regeneration of sulfuric acid, the plant incinerates hazardous waste, under the conditions of the facility's RCRA Part B Permit (HW-50095).

Eco Services receives benzene waste streams from offsite customers to use as fuel in the Sulfuric Acid Regeneration Unit No. 2 (SARU) industrial furnace which is permitted under 40 CFR 266 Subpart H. Thus, the SARU industrial furnace is a treatment process for the waste and are exempt from testing and monitoring per 40 CFR 61.348(d)(1) and 61.354(a). The benzene waste streams may be stored in one or more of six treatment services (TS) storage tanks prior to treatment. The tanks are vented to the SARU industrial furnace for vapor control per 40 CFR 61.343(a). The TS Vapor Combustor provides backup vapor control for the six TS tanks. The site has no oil-water separators or individual drain systems used to convey benzene waste.

Eco Services submits this quarterly report in accordance with the reporting requirements of 40 CFR 61.357:

- Pursuant to 40 CFR 61.357(d)(6), Eco Services Operations LLC hereby certifies that all required inspections were performed. The required inspections are itemized in Table 1.
- Pursuant to 61.357(d)(7)(iv)(G), there has been no change in the location at which the tank vent stream is introduced into the primary control device flame zone, the SARU industrial furnace.

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012

Mr. Robinson
Page 2

- Pursuant to 40 CFR 61.357(d)(7)(iv)(A), there have been no 3-hour periods during which the average temperature of the gas stream in the combustion zone for the TS Vapor Combustor was $<50^{\circ}\text{F}$ below design temperature when being used as the control device for the TS storage tanks.

Please contact Floyd Dickerson at (713) 924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Mr. Arturo Blanco, Bureau of Air Quality Control, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

Table 1

**Eco Services Operations LLC
Houston, Texas
Benzene Waste NESHAP Inspection Requirements
For Quarterly Period Ending: December 31, 2014**

Inspection	Was inspection performed?	Exceptions Noted
Annual Method 21 inspections of tank covers and openings per 61.343(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of tank covers and openings per 61.343(c)	x Yes Except as Noted	
Initial and annual Method 21 inspections of containers per 61.345(a)(1)	x Yes Except as Noted	
Initial and quarterly visual inspections of containers per 61.345(b)	x Yes Except as Noted	
Annual Method 21 inspections of treatment system openings (Regeneration Unit No. 2) per 61.348(e)(3)(ii)	x Yes Except as Noted	
Annual Method 21 inspections of closed vent systems (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of closed vent systems and control devices (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace, including the vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(f)	x Yes Except as Noted	
Daily inspections of control device continuous monitoring data (temperature of TS vapor combustor and "selected parameter" on Regeneration Unit No. 2 industrial furnace) per 61.354(c)	x Yes Except as Noted	

Note: Where annual inspections are listed, they were not necessarily performed during this quarterly reporting period, but have been performed in the last year.

441890 v3
Al/Al/EN

Babst Calland
Attorneys at Law

110000460901

Michael H. Winek
Attorney at Law
T 412.394.6538
mwinek@babstcalland.com

RECEIVE

JAN 29 2015

January 28, 2015

Air Toxics & Inspection
Coordination Branch
6EN-A

Via FedEx

Chief, Environmental Enforcement
Section
Environment and Natural Resources
Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611

Phillip Brooks
U.S. EPA Headquarters
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N.W.
Mailcode 2242A
Washington, D.C. 20460

Jan Gerro
U.S. EPA Region 6
1445 Ross Avenue, Suite 1200
Mailcode 6RCEA
Dallas, TX 75202

Himanshu Vyas
U.S. EPA Region 6
1445 Ross Avenue, Suite 1200
Mailcode 6ENAT
Dallas, TX 75202

**RE: DOJ No. 90-5-2-1-08500 Consent Decree Semi-Annual Report
U.S. v. Rhodia Inc., USDC (N.D. Ind.), Civil Action No. 2: 07-CV-134-WCL**


Ladies and Gentlemen:

In accordance with Section VII of the Consent Decree ("CD") entered in the above-entitled matter, enclosed please find the Semi-Annual Report for the Houston, Texas facility. The Report, together with the other supporting documents enclosed, satisfies the obligation to report on certain matters under the CD within 30 days after the end of each half calendar year (see CD ¶¶ 21-23).

Chief, Environmental Enforcement Section
January 28, 2015
Page 2 of 2

If you have any questions or wish to discuss this submittal, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michael H. Wineck". The signature is fluid and cursive, with the first name "Michael" and last name "Wineck" clearly distinguishable.

Michael H. Wineck, Esq.
Counsel for Eco Services Operations LLC

Enclosures

Eco Services Operations LLC - Houston #8 and #2 Plants
Consent Decree
Semi-Annual Report for Period Covering July 1 to December 31, 2014
Civil Action No.: 2: 07-CV-134-WCL

1. Effective Dates:
 - a. Houston #8 – July 1, 2009
 - b. Houston #2 – April 1, 2014
2. Status of Construction or Compliance Measures Necessary to Meet Emissions Limits.

The plant has now completed the construction and implementation of all compliance measures necessary to meet the CD emission limits for #8 Unit. The SO₂ abatement unit was started up on November 19, 2008.

Construction has been completed and implementation of all compliance measures necessary to meet the CD emission limits for #2 Unit. The SO₂ abatement unit was started up on February 7, 2014.

The plant has completed the implementation of all compliance measures necessary to meet the CD emission limits.

3. Compliance Issues and Proposed or Implemented Solutions
 - (a) Houston #8 Long-Term SO₂ Limit of 1.70 lbs./ton – The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. At no time did the plant exceed this Long-Term Limit during this reporting period. The Houston #8 unit operated below the permitted 1.70 lbs. SO₂/ton of acid produced from January 1, 2014 to December 31, 2014.
 - (b) Houston #8 Short-term SO₂ limit of 3.00 lbs./ton - The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. At no time did the plant exceed this Short-Term Limit during this reporting period.
 - (c) Houston #2 Long-Term SO₂ Limit of 1.80 lbs./ton – The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. The start of the Long-Term Limit compliance period is April 1, 2014.
 - (d) Houston #2 Short-term SO₂ limit of 3.00 lbs./ton - The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period.

Eco Services Operations LLC - Houston #8 and #2 Plants
Consent Decree
Semi-Annual Report for Period Covering July 1 to December 31, 2014
Civil Action No.: 2: 07-CV-134-WCL

(e) During the reporting period, the plant has not encountered any problems, and does not anticipate encountering any problems, with any of the conditions of the Consent Decree or any applicable permits or any other event affecting the plant's performance under the Consent Decree.

4. Status of Permit Applications

Houston Title V air permit O-03049 was approved on June 28, 2012. Requirements for compliance with 40 CFR Part 60.83(a)(1) (sulfuric acid mist) Houston #2 and compliance with the Consent Decree SO₂ emission rates for Houston #2 have been included as conditions in the Title V air permit.

Operation and Maintenance Work

The plant does not currently have any operation or maintenance work pending as a result of any of the conditions of the Consent Decree.

5. Reports to Agencies

Eco Services has installed a dual range SO₂ and a new O₂ CEMS for the Houston #8 in 2008. The SO₂ and O₂ CEMS monitor and record the 3-hour arithmetic average SO₂ emission rate in units of lbs. SO₂ per ton 100% acid produced.

The CEMS were certified and calibrated, and has been maintained and operated in accordance with the applicable requirements of 40 CFR 60.11, 60.13, Part 60, Appendix B Performance Specification 2, and Part 60 Appendix F Procedure 1.

Cylinder gas audits were conducted on the Houston #8 stack SO₂ and O₂ CEMS on September 15, 2014 and October 10, 2014. The CEMS passed these tests.

Eco Services has installed a dual range stack SO₂ CEMS and a new main gas blower SO₂ CEMS for the Houston #2 in 2014. The SO₂ CEMS monitor and record the 3-hour arithmetic average SO₂ emission rate in units of lbs. SO₂ per ton 100% acid produced.

The CEMS were certified and calibrated, and has been maintained and operated in accordance with the applicable requirements of 40 CFR 60.11, 60.13, Part 60, Appendix B Performance Specification 2, and Part 60 Appendix F Procedure 1.

Cylinder gas audits were conducted on the Houston #2 stack SO₂ CEMS on August 29, 2014 and on January 16, 2015. Cylinder gas audits were conducted on the Houston #2 main gas blower SO₂ CEMS on August 29, 2014 and January 20, 2015. The CEMS passed the gas audit tests.

Eco Services Operations LLC - Houston #8 and #2 Plants
Consent Decree
Semi-Annual Report for Period Covering July 1 to December 31, 2014
Civil Action No.: 2: 07-CV-134-WCL

The plant submitted Excess Emission Reports for SO₂ per 40 CFR 60.7(c)-(d) and Data Assessment Reports for SO₂ CEMS per 40 CFR Part 60, Appendix F for the first and second calendar quarters of 2014 to the US Environmental Protection Agency (USEPA) and TCEQ.

A copy of the semiannual report is attached which includes the results of the RATA and cylinder gas audits.

I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and their attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gather and present the information contained therein. I further certify, based on my personal knowledge or on my inquiry of those individuals immediately responsible for obtaining the information, that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowingly and willfully submitting a materially false statement.

Name/Position: William McConnell/Plant Manager of Baytown and Houston Plants

Signature: William J. McConnell

Date: 1/21/2015



Eco Services Operations LLC
Houston Plant

CERTIFIED MAIL; RETURN RECEIPT REQUESTED: (7011 2000 0001 4575 0845)

January 21, 2015

Texas Commission on Environmental Quality
Office of Permitting, Remediation and Registration
Air Permits Division, MC-163
P.O. Box 13087
Austin, Texas 78711-3087

Subject: Eco Services Operations LLC (CN604683482)
Houston Plant (RN100220581)
Consent Decree (Civil Action No. 2:07CV134 WL)
Air Permit 19282 and PSD-TX-1081
Air Permit 4802 and PSD-TX-1260
Excess Emission Report for SO₂ per 40 CFR 60.7(c)-(d)
Data Assessment Report for SO₂ and O₂ CEMs per 40 CFR Part 60, Appendix F

Dear Sir or Madam:

In accordance with the Consent Decree referenced above, the Eco Services Operations LLC (Eco Services), formally Solvay USA Inc. and Rhodia Inc., Houston No. 8 became subject to 40 CFR Part 60 Subpart H, Standards of Performance for Sulfuric Acid Plants on November 19, 2008 and Houston Regen 2 became subject on April 1, 2014. Further, the Consent Decree specifies a SO₂ emission standard that is more stringent than Subpart H and also incorporates an EPA-approved Alternative Monitoring Plan (AMP). As such, the semiannual excess emission report required by 40 CFR 60.7(c)-(d) and the semiannual data assessment report (DAR) required by 40 CFR Part 60 Appendix F, Procedure 1, Section 7 will address compliance with respect to the more stringent CD requirements and the AMP. These reports are attached for the July 1 to December 31, 2014 semiannual reporting period.

The relevant SO₂ standards required by the CD and AMP are as follows:

No. 8 Unit

- Per CD paragraph 11.b.i, emissions of SO₂ are not to exceed a long term limit of 1.70 pounds per ton of 100% sulfuric acid produced (averaged over all operating hours in a rolling 365-day period).
- Per CD paragraph 11.b.ii, emissions of SO₂ are not to exceed a short term limit of 3.00 pounds per ton of 100% sulfuric acid produced (averaged over each rolling 3-hour period). This limit does not apply during periods of startup, shutdown, and malfunction.

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012

As discussed in the AMP, Eco Services uses dual analyzers to determine the conversion factor for converting monitoring data (ppm SO₂ and % O₂) into units of the standard (lbs/ton). This exceeds the "three times daily" minimum discussed in 40 CFR 60.84(b).

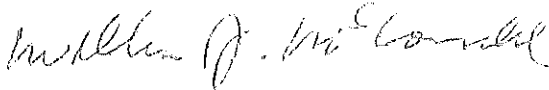
Houston # 2

- Per CD paragraph 11.b.viii, emissions of SO₂ are not to exceed a long term limit of 1.80 pounds per ton of 100% sulfuric acid produced (averaged over all operating hours in a rolling 365-day period).
- Per CD paragraph 11.b.ii, emissions of SO₂ are not to exceed a short term limit of 3.00 pounds per ton of 100% sulfuric acid produced (averaged over each rolling 3-hour period). This limit does not apply during periods of startup, shutdown, and malfunction.

As discussed in the AMP, Eco Services uses dual analyzers to determine the conversion factor for converting monitoring data (ppm SO₂) into units of the standard (lbs/ton). This exceeds the "three times daily" minimum discussed in 40 CFR 60.84(b)

If you have any questions or require additional information, please contact Floyd Dickerson at 713-924-1408.

Sincerely,



William McConnell
Plant Manager

Attachment(s)

cc: Air Section Manager, TCEQ Region 12
Mr. Bob Allen, Director, Harris County Pollution Control
Mr. Arturo Blanco, Bureau Chief of Air Quality Control, Health and Human Services Department, City of Houston
Mr. Huimamshu Vyas, EPA Region 6, 1445 Ross Avenue, Suite 1200, Mailcode 6ENAT, Dallas, TX 75202-2733
EPA Region 6, New Source Review Program, 1445 Ross Avenue, Dallas, TX 75202-2733

NSPS Excess Emissions Report
July 1 – December 31, 2014

General Information:

Pollutant:	Sulfur Dioxide (SO ₂)
Reporting period dates:	July 1 – December 31, 2014
Emission Limitation:	Houston #8: 3.00 lbs/ton short-term, 1.70 lbs/ton long-term Houston #2: 3.00 lbs/ton short-term, 1.80 lbs/ton long-term
Address:	8615 Manchester Street, Houston, Texas 77012
Process Unit Description (Source Unit No):	Houston #8 Sulfuric Acid Unit
Monitor Manufacturer and Model No (Stack SO ₂):	Ametek Model 920
Date of Latest CEMS Certification or Audit (Stack):	October 10, 2014
CEMS span values per the AMP (Stack) ⁽¹⁾ :	Dual range: Normal: 0 – 500 ppm SO ₂ SSM: 0 – 3,600 ppm SO ₂
Process Unit Description (Source Unit No):	Houston #2 Sulfuric Acid Unit
Monitor Manufacturer and Model No (Stack SO ₂):	Ametek Model 920
Monitor Manufacturer and Model No (Converter Inlet SO ₂):	Ametek Model 920
Date of Latest CEMS Certification or Audit (Stack):	January 16, 2015
Date of Latest CEMS Certification or Audit (Converter Inlet):	January 20, 2015
CEMS span values per the AMP (Stack) ⁽²⁾ :	Dual range: Normal: 0 – 500 ppm SO ₂ SSM: 0 – 3,600 ppm SO ₂
CEMS span values per the AMP (Converter Inlet) ⁽²⁾ :	Single range: 0 – 15 % SO ₂

Notes:

- (1) Refer to EPA approved Alternative Monitoring Plan for the Houston #8.
(2) Refer to EPA approved Alternative Monitoring Plan for the Houston #2.

NSPS Excess Emissions Report
July 1 – December 31, 2014

No. 8 Emission data summary – Long-Term Limit

1. Duration of excess emissions (as defined per CD and AMP) in reporting period due to:	
a. Startup/shutdown	0 hours
b. Control equipment problems	0 hours
c. Process problems	0 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total duration of excess emission	0 hours
3. Total duration of excess emissions as percent of total source operating time	0%

No. 8 Emission data summary – Short-Term Limit

1. Duration of excess emissions (as defined per CD and AMP) in reporting period due to:	
a. Startup/shutdown	NA – limit does not apply during startup/shutdown
b. Control equipment problems	0 hours
c. Process problems	0 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total duration of excess emission	0 hours
3. Total duration of excess emissions as percent of total source operating time	0%

**NSPS Excess Emissions Report
July 1 – December 31, 2014**

Houston #8 Unit Stack SO₂ Analyzer

1. CEMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0 hours
b. Non-Monitor equipment malfunctions	0 hours
c. Quality assurance calibration	102.6 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total CEMS Downtime	102.6 hours ⁽¹⁾
3. Total CEMS Downtime as percent of total source operating time	2.32 %

Houston #8 Unit Stack O₂ Analyzer

1. CEMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0 hours
b. Non-Monitor equipment malfunctions	0 hours
c. Quality assurance calibration	102.6 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total CEMS Downtime	102.6 hours ⁽¹⁾
3. Total CEMS Downtime as percent of total source operating time	2.32 %

- ⁽¹⁾ The Houston #8 Unit followed procedures specified in an EPA approved Alternative Monitoring Plan (AMP) for CEMS malfunctions. In accordance with the AMP, during CEMS malfunctions lasting more than 24 continuous hours Eco Services generally:
- Conducted sampling with hand held monitors when the stack SO₂ and O₂ CEMS malfunctioned.

NSPS Excess Emissions Report
July 1 – December 31, 2014

Houston #2 Emission data summary – Long-Term Limit

1. Duration of excess emissions (as defined per CD and AMP) in reporting period due to:	
a. Startup/shutdown	0 hours
b. Control equipment problems	0 hours
c. Process problems	0 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total duration of excess emission	0 hours
3. Total duration of excess emissions as percent of total source operating time	0%

Houston #2 Emission data summary – Short-Term Limit

1. Duration of excess emissions (as defined per CD and AMP) in reporting period due to:	
a. Startup/shutdown	NA – limit does not apply during startup/shutdown
b. Control equipment problems	0 hours
c. Process problems	0 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total duration of excess emission	0 hours
3. Total duration of excess emissions as percent of total source operating time	0%

**NSPS Excess Emissions Report
July 1 – December 31, 2014**

Houston #2 Stack SO₂ Analyzer

1. CEMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0 hours
b. Non-Monitor equipment malfunctions	0 hours
c. Quality assurance calibration	102.6 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total CEMS Downtime	102.6 hours ⁽¹⁾
3. Total CEMS Downtime as percent of total source operating time	2.32 %

Houston #2 Converter Inlet (Main Gas Blower) Analyzer

1. CEMS downtime in reporting period due to:	
a. Monitor equipment malfunctions	0 hours
b. Non-Monitor equipment malfunctions	0 hours
c. Quality assurance calibration	102.6 hours
d. Other known causes	0 hours
e. Unknown causes	0 hours
2. Total CEMS Downtime	102.6 hours ⁽¹⁾
3. Total CBMS Downtime as percent of total source operating time	2.32 %

- ⁽¹⁾ The Houston #2 followed procedures specified in an EPA approved Alternative Monitoring Plan (AMP) for CEMS malfunctions. In accordance with the AMP, during CEMS malfunctions lasting more than 24 continuous hours Eco Services generally:
- Conducted sampling with hand held monitors when the stack SO₂ and converter inlet SO₂ CEMS malfunctioned

NSPS Excess Emissions Report
July 1 – December 31, 2014

Data Assessment Reports (DARs) per 40 CFR Part 60 Appendix F

Analyzer/ Pollutant/Units	Reporting Period	Accuracy Assessment			Any out-of- control periods for Calibration Drift Assessment?
		Type (RATA, CGA, or RAA)	Any Out-of- Control Periods?	Notes	
Houston #8 Stack SO ₂ , ppm	3Q14	CGA	No	Report enclosed	No
	4Q14	CGA	No	Report enclosed	No
Houston #8 Stack O ₂ , %	3Q14	CGA	No	Report enclosed	No
	4Q14	CGA	No	Report enclosed	No
Houston #2 Stack SO ₂ , ppm	3Q14	CGA	No	Report enclosed	No
	4Q14	CGA	No	Report enclosed	No
Houston #2 Converter Inlet SO ₂ , ppm	3Q14	CGA	No	Report enclosed	No
	4Q14	CGA	No	Report enclosed	No

Describe any changes since last quarter in CEMS, process or controls:

There have been no changes in the CEMS, process, or controls since the No. 8 Unit was started on November 19, 2008.

There have been no changes in the CEMS, process, or controls since the Regen 2 was started on April 1, 2014.

***** Certification Statement for Summary Report per 40 CFR 60.7(d)*****

I certify that the information contained in this report is true, accurate, and complete.

 William McConnell
 Name of Responsible Official

 Signature

 Plant Manager
 Title

 Date

Eco Services Operations LLC
 Houston Plant
 8615 Manchester Street
 Houston, TX 77012



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist
Stack SO₂ Analyzer

Unit Number (Circle One):

2

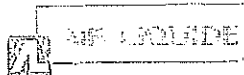
⑧

Date: 9/15/14 Time: 1:20p
Serial Number: VE-920-8700-2

Technician: Rody Barrera
Signature: [Signature]

Cylinder ID number	ALM009085		CC 58452			
Date of Certification	10/23/13		10/22/13			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Protocol		EPA Protocol			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	127	980	127	980	127	980
CEM Response value C_m (ppm)	130	979	114	971	119	979
Accuracy A (% or ppm)	2.362	-3.357	-10.236	-3.214	-6.299	-3.357

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS

Guaranteed +/- 2% Accuracy

8833 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
8833 DICE ROAD
SANTA FE SPRINGS, CA 90670-2516

P.O. No.: 4501864926
Document #: 52372052-004
Folio #: RDIAQRTY003

Customer
RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION Gas Type : SO₂, BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: ALM009085 Certification Date: 23Oct2013 Exp. Date: 24Oct2021
Cylinder Pressure: 2000 PSIG Batch No: SBO0079450

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY (ABSOLUTE / RELATIVE)
SULFUR DIOXIDE	127 PPM	1.0 PPM / 0.8 %
NITROGEN	BALANCE	

TRACEABILITY

REFERENCE STANDARD

COMPONENT	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE
SULFUR DIOXIDE	100.4000 PPM	0.8000 PPM	KAL003572	NTRM 1694	24Jan2018

ANALYTICAL METHOD

1st Analysis: 15Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	126.8 PPM

2nd Analysis: 23Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	126.9 PPM

Special Notes: 125.00 PPM SO₂ (100-150 PPM ACCEPTABLE), BALANCE NITROGEN EPA CEMS GRADE PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY: THUAN TRAN



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS

Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
8832 DICE ROAD
SANTA FE SPRINGS, CA 90670-2516

P.O. No.: 4601864926
Document #: 52372052-003
Folio #: RDIAQRTY004

Customer

RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION Gas Type : SO₂,BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: CC58452
Cylinder Pressure: 2000 PSIG

Certification Date: 22Oct2013

Exp. Date: 23Oct2021
Batch No: SB00079448

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY (ABSOLUTE / RELATIVE)
SULFUR DIOXIDE	280 PPM	2. PPM / 0.7 %
NITROGEN	BALANCE	

TRACEABILITY

REFERENCE STANDARD

COMPONENT	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE
SULFUR DIOXIDE	255.3000 PPM	2.0000 PPM	AAL072952	NTRM 0260	20May2016

ANALYTICAL METHOD

1st Analysis: 14Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	279.6 PPM

2nd Analysis: 22Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	280.6 PPM

Special Notes: 275.00 PPM SO₂ (250-300 PPM ACCEPTABLE), BALANCE NITROGEN EPA CEMS GRADE PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY: THUAN TRAN



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist
Stack SO₂ Analyzer

Unit Number (Circle One):

2

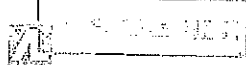
⑧

Date: 9/15/14 Time: 2:10p
Serial Number: VE-920-8700-2

Technician: Rody Baraza
Signature: [Signature]

Cylinder ID number	ALM 015638		ALM 049351			
Date of Certification	10/22/13		10/21/13			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Protocol		EPA Protocol			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	906	1990	906	1990	906	1990
CEM Response value C_m (ppm)	914	2025	919	2023	918	2022
Accuracy A (% or ppm)	.883	1.759	1.435	1.658	1.325	1.068

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



Air Liquide America
Specialty Gases LLC



Intertek

COMPLIANCE CLASS

Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013

AIR LIQUIDE AMERICA SPECIALTY GASES LLC

8832 DICE ROAD

SANTA FE SPRINGS, CA 90670-2516

P.O. No.: 4601864926

Document #: 52372052-002

Folio #: RDIAQRTY005

Customer

RHODIA INC: STOREROOM

8615 MANCHESTER

HOUSTON TX 77012

US

ANALYTICAL INFORMATION Gas Type : SO₂,BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/500/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: ALM015638 Certification Date: 22Oct2013 Exp. Date: 23Oct2021
Cylinder Pressure: 2000 PSIG Batch No: SBO0079446

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY (ABSOLUTE / RELATIVE)
SULFUR DIOXIDE	906 PPM	7. PPM / 0.8 %
NITROGEN	BALANCE	

TRACEABILITY

REFERENCE STANDARD

COMPONENT	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE
SULFUR DIOXIDE	975.0000 PPM	7.0000 PPM	KAL003179	NTRM 1662	01Jun2016

ANALYTICAL METHOD

1st Analysis: 14Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	906.6 PPM

2nd Analysis: 22Oct2013

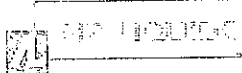
COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	906.3 PPM

Special Notes:

900.00 PPM SO₂ (800-1000 PPM ACCEPTABLE), BALANCE NITROGEN EPA CEMS GRADE PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY:

THUAN TRAN



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS

Guaranteed $\pm 2\%$ Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013
AIR LIQUIDE AMERICA SPECIALTY GASES LLC
8832 DICE ROAD
SANTA FE SPRINGS, CA 90670-2516

P.O. No.: 4501864926
Document #: 52372052-001
Folio #: RDIAQRTY006

Customer
RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION Gas Type : SO₂, BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1, EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: ALM049351
Cylinder Pressure: 2000 PSIG

Certification Date: 21Oct2013

Exp. Date: 22Oct2021
Batch No: SBO0079337

COMPONENT
SULFUR DIOXIDE
NITROGEN

CERTIFIED CONCENTRATION (Moles)
1,990 PPM
BALANCE

ACCURACY (ABSOLUTE / RELATIVE)
12. PPM / 0.6 %

TRACEABILITY

REFERENCE STANDARD

COMPONENT
SULFUR DIOXIDE

CONCENTRATION
2402.0000 PPM

UNCERTAINTY
14.0000 PPM

CYLINDER
ALM063514

TYPE/SRM SAMPLE
NTRM 1664

EXP. DATE
03Nov2017

ANALYTICAL METHOD

1st Analysis: 14Oct2013

COMPONENT
SULFUR DIOXIDE

INSTRUMENT
MKS-FTIR/2030/001785245

ANALYTICAL/PRINCIPLE
FTIR

CALIBRATED
25Sep2013

CONCENTRATION
1991. PPM

2nd Analysis: 21Oct2013

COMPONENT
SULFUR DIOXIDE

INSTRUMENT
MKS-FTIR/2030/001785245

ANALYTICAL/PRINCIPLE
FTIR

CALIBRATED
25Sep2013

CONCENTRATION
1991. PPM

Special Notes:

1980.00 PPM SO₂ (1800-2100 ACCEPTABLE), BALANCE NITROGEN 1980.00 PPM SO₂ (1800-2100 ACCEPTABLE), BALANCE NITROGEN
EPA CEMS PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY:

THUAN TRAN



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist
Stack SO₂ Analyzer

Unit Number (Circle One):

2

Date: 9/15/14 Time: 3:05p
Serial Number: VE-920-8700-2

Technician: Judy Borraza
Signature: [Signature]

Cylinder ID number	CC 51515		CC 152088			
Date of Certification	10/25/13		10/25/13			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Protocol		EPA Protocol			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	5.07	15	5.07	15	5.07	15
CEM Response value C_m (ppm)	5.02	15.2	5.03	15.2	5.04	15.2
Accuracy A (% or ppm)	-1.986	1.333	-1.789	1.333	-1.986	1.333

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



AIR LIQUIDE

Air Liquide America
Specialty Gases LLC

Intertek

COMPLIANCE CLASS

Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 662-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013

AIR LIQUIDE AMERICA SPECIALTY GASES LLC

8832 DICE ROAD

SANTA FE SPRINGS, CA 90670-2516

P.O. No.: 4501864926

Document #: 52372226-001

Folio #: RDIA018

Customer

RHODIA INC. STOREROOM

8615 MANCHESTER

HOUSTON TX 77012

US

ANALYTICAL INFORMATION Gas Type : O2,BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1, EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: CC51515
Cylinder Pressure: 2000 PSIG

Certification Date: 25Oct2013

Exp. Date: 26Oct2021
Batch No: SB00079703

COMPONENT

CERTIFIED CONCENTRATION (Moles)

ACCURACY (ABSOLUTE / RELATIVE)

OXYGEN
NITROGEN

15.0 %
BALANCE

0.11 % / 0.7 %

TRACEABILITY

REFERENCE STANDARD

COMPONENT

CONCENTRATION
20.8500 %

UNCERTAINTY
0.1300 %

CYLINDER
K016558

TYPE/SRM SAMPLE
NTRM 2659

EXP. DATE
14May2018

ANALYTICAL METHOD

1st Analysis: 25Oct2013

COMPONENT
OXYGEN

INSTRUMENT
HP/5890F/3336A60154

ANALYTICAL/PRINCIPLE
TCD&TCD

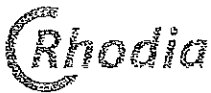
CALIBRATED
25Oct2013

CONCENTRATION
14.97 %

Special Notes: 15% (+/- 5%) OXYGEN, BALANCE NITROGEN EPA PROTOCOL - written certs & tags Rhodia

APPROVED BY:

DC



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist

Stack SO₂ Analyzer
Tail Gas Scrubber

Cyl. Number (Circle One):

(2)

8

Date: 3/29/14 Time: 10:43 AM
Serial Number: 24-920-10628-1

Technician: Andrew Kover / F. Cortes
Signature: [Signature]

Cylinder ID number	CC58452		ALM009085			
Date of Certification	10/22/2013		10/23/2014			
Type of certification (e.g. EPA Protocol 1 or CRM):	EPA Protocol 1		EPA Protocol 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	127	280	127	280	127	280
CEM Response value C_m (ppm)	135	284	130	284	129	283
Accuracy A (% or ppm)	6.299%	1.429%	2.362%	1.429%	1.575%	1.071%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



AIR LIQUIDE AMERICA

Air Liquide America
Specialty Gases LLC

Intertek

COMPLIANCE CLASS
Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
8832 DICE ROAD
SANTA FE SPRINGS, CA 90670-2516P.O. No.: 4501864926
Document #: 52372052-003
Folio #: RDIAQRTY004CustomerRHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON TX 77012
US**ANALYTICAL INFORMATION** Gas Type : SO₂, BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/600/R-12/631; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: CC58452 Certification Date: 22Oct2013 Exp. Date: 23Oct2021
Cylinder Pressure: 2000 PSIG Batch No: SB00079448

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY (ABSOLUTE / RELATIVE)
SULFUR DIOXIDE	280 PPM	2. PPM / 0.7 %
NITROGEN	BALANCE	

TRACEABILITYREFERENCE STANDARD

COMPONENT	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE
SULFUR DIOXIDE	255.3000 PPM	2.0000 PPM	AAL072952	NTRM 0260	20May2016

ANALYTICAL METHOD

1st Analysis: 14Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	279.6 PPM

2nd Analysis: 22Oct2013

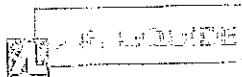
COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	280.6 PPM

Special Notes:

275.00 PPM SO₂ (250-300 PPM ACCEPTABLE), "BALANCE NITROGEN EPA CEMS GRADE PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY:

THUAN TRAN



Air Liquide America
Specialty Gases LLC



Intertek

COMPLIANCE CLASS

Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013
AIR LIQUIDE AMERICA SPECIALTY GASES LLC
8332 DICE ROAD
SANTA FE SPRINGS, CA 90670-2516

P.O. No.: 4501864926
Document #: 52372052-004
Folio #: RDIAQRTY003

Customer
RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION Gas Type : SO₂, BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: ALM009085
Cylinder Pressure: 2000 PSIG

Certification Date: 23Oct2013

Exp. Date: 24Oct2021
Batch No: SB00079450

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY (ABSOLUTE / RELATIVE)	
	127	PPM	1.0	PPM / 0.8 %
SULFUR DIOXIDE				
NITROGEN		BALANCE		

TRACEABILITY

REFERENCE STANDARD

COMPONENT	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE
SULFUR DIOXIDE	100.4000 PPM	0.8000 PPM	KAL003572	NTRM 1694	24Jan2018

ANALYTICAL METHOD

1st Analysis: 15Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	126.8 PPM

2nd Analysis: 23Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	126.9 PPM

Special Notes: 125.00 PPM SO₂ (100-150 PPM ACCEPTABLE), BALANCE NITROGEN EPA CEMS GRADE PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY:

THUAN TRAN



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist

Stack SO₂ Analyzer

Tail Gas Scrubber

Unit Number (Circle One):

21

8

Date: 8/29/14 Time: 10:43 AM

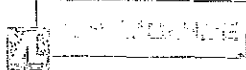
Technician: A. Kovac / F. Carlsen

Serial Number: 24-920-10628-1

Signature: [Signature]

Cylinder ID number	ALM015638	ALM049351	
Date of Certification	10/22/2013	10/21/2013	
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Protocol 1	EPA Protocol 1	
	Trial 1		Trial 2
	Trial 3		
	Audit Point 1	Audit Point 2	Audit Point 1
			Audit Point 2
Certified audit value C_a (ppm)	906	1990	906
			1990
CEM Response value C_m (ppm)	921	1980	927
			1978
Accuracy A (% or ppm)	1.656%	-0.503%	2.318%
			-0.603%
			2.318%
			-0.503%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS

Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013

AIR LIQUIDE AMERICA SPECIALTY GASES LLC, P.O. No.: 4601864926

8832 DICE ROAD

SANTA FE SPRINGS, CA 90670-2516

Document #: 52372052-002

Folio #: RDI AQR TY005

Customer

RHODIA INC. STOREROOM

8615 MANCHESTER

HOUSTON TX 77012

US

ANALYTICAL INFORMATION Gas Type : SO₂, BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: ALM015638
Cylinder Pressure: 2000 PSIG

Certification Date: 22Oct2013

Exp. Date: 23Oct2021
Batch No: SB00079446

COMPONENT
SULFUR DIOXIDE
NITROGEN

CERTIFIED CONCENTRATION (Moles)
906 PPM
BALANCE

ACCURACY (ABSOLUTE / RELATIVE)
7. PPM / 0.8 %

TRACEABILITY

REFERENCE STANDARD

COMPONENT	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE
SULFUR DIOXIDE	975.0000 PPM	7.0000 PPM	KAL003179	NTRM 1662	01Jun2016

ANALYTICAL METHOD

1st Analysis: 14Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	906.0 PPM

2nd Analysis: 22Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	906.3 PPM

Special Notes: 900.00 PPM SO₂ (800-1000 PPM ACCEPTABLE), BALANCE NITROGEN EPA CEMS GRADE PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY:

THUAN TRAN



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS
Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013
AIR LIQUIDE AMERICA SPECIALTY GASES LLC
8832 DICE ROAD
SANTA FE SPRINGS, CA 90670-2516

P.O. No.: 4501864926
Document #: 52372052-001
Folio #: RDIAGRTY006

Customer
RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION Gas Type : SO₂, BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: ALM049351 Certification Date: 21Oct2013 Exp. Date: 22Oct2021
Cylinder Pressure: 2000 PSIG Batch No: S800079337

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY (ABSOLUTE / RELATIVE)
SULFUR DIOXIDE	1,990 PPM	12. PPM / 0.6 %
NITROGEN	BALANCE	

TRACEABILITY

REFERENCE STANDARD	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE
COMPONENT					
SULFUR DIOXIDE	2402.0000 PPM	14.0000 PPM	ALM063514	NTRM 1664	03Nov2017

ANALYTICAL METHOD

1st Analysis: 14Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	1991. PPM

2nd Analysis: 21Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	1991. PPM

Special Notes:

1980.00 PPM SO₂ (1800-2100 ACCEPTABLE), BALANCE NITROGEN 1980.00 PPM SO₂ (1800-2100 ACCEPTABLE), BALANCE NITROGEN
EPA CEMS PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY:

THUAN TRAN



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist MGB SO₂ Analyzer

Date: 9/25/2014 Time: 2:54 PM
Serial Number: 4338

Technician: Marcus G.
Signature: [Signature]

Cylinder ID number	CC196449		ALM046889			
Date of Certification	07 Oct 2013		07 Oct 2013			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Protocol 1		EPA Protocol 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	3.75	8.24	3.75	8.24	3.75	8.24
CEM Response value C_m (ppm)	3.80	8.24	3.75	8.13	3.61	7.99
Accuracy A (% or ppm)	1.333	0	0	1.353	-3.733	-3.033

where $A = \frac{(C_m - C_a)}{C_a} \times 100$

CERTIFIED MASTER CLASS



Air Liquide America
Specialty Gases LLC



Scott™

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950 Fax: 248-589-2134

Single-Certified Calibration Standard

CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard

Product Information

Document #: 52384839-002
Item No.: M374501-P-30AL
P.O. No.: 4501864926

Cylinder Number: ALMO46889
Cylinder Size: 30AL
Certification Date: 07Oct2013
Expiration Date: 08Oct2016
Lot Number: TRO0094111

Customer

RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON, TX 77012
US

CERTIFIED CONCENTRATION

Component Name

SULFUR DIOXIDE
NITROGEN

Concentration (Moles)

3.75 %
BALANCE

Accuracy (+/-%)

2

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY:

ROBERT LESNIAK

DATE:

10-7-13

CERTIFIED MASTER CLASS



Air Liquide America
Specialty Gases LLC



Scott™

Single-Certified Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard

Product Information

Document #: 52384839-003
Item No.: M374501-P-30AL
P.O. No.: 4501864926

Cylinder Number: CC196449
Cylinder Size: 30AL
Certification Date: 07Oct2013
Expiration Date: 08Oct2016
Lot Number: TRO0094123

Customer

RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON, TX 77012
US

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)	Accuracy (+/-%)
SULFUR DIOXIDE	8.24	2
NITROGEN	% BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: _____
ROBERT LESNIAK

DATE: _____



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist
Stack SO₂ Analyzer

High

Unit Number (Circle One):

2

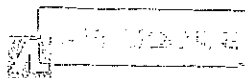
⑧

Date: 10/9/14 Time: 11:50 pm
Serial Number: VE-920-8700-2

Technician: Enrique Nieto
Signature: Enrique Nieto

Cylinder ID number	ALM15638		ALM049351			
Date of Certification	22 OCT. 2013		21 OCT. 2013			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA 1150 PSI		EPA 1150 PSI			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	906	1990	906	1990	906	1990
CEM Response value C_m (ppm)	909	2001	915	2010	916	1999
Accuracy A (% or ppm)	0.331	0.553	0.993	1.005	1.104	0.452

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS

Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013

AIR LIQUIDE AMERICA SPECIALTY GASES LLC

8832 DICE ROAD

SANTA FE SPRINGS, CA 90670-2516

P.O. No.: 4501864926

Document #: 52372052-002

Folio #: RDIAQRTY005

Customer

RHODIA INC. STOREROOM

8615 MANCHESTER

HOUSTON TX 77012

US

ANALYTICAL INFORMATION Gas Type : SO₂, BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: ALM015638

Certification Date: 22Oct2013

Exp. Date: 23Oct2021

Cylinder Pressure: 2000 PSIG

Batch No: SBO0079446

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY (ABSOLUTE / RELATIVE)
SULFUR DIOXIDE	906 PPM	7. PPM / 0.8 %
NITROGEN	BALANCE	

TRACEABILITY

REFERENCE STANDARD

COMPONENT	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE
SULFUR DIOXIDE	975.0000 PPM	7.0000 PPM	KAL003179	NTRM 1662	01Jun2016

ANALYTICAL METHOD

1st Analysis: 14Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001786245	FTIR	25Sep2013	906.6 PPM

2nd Analysis: 22Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001786245	FTIR	25Sep2013	906.3 PPM

Special Notes: 900.00 PPM SO₂ (800-1000 PPM ACCEPTABLE), BALANCE NITROGEN EPA CEMS GRADE PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY:

THUAN TRAN



AIR LIQUIDE AMERICA

Air Liquide America
Specialty Gases LLC

Intertek

COMPLIANCE CLASS

Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
8832 DICE ROAD
SANTA FE SPRINGS, CA 90670-2516P.O. No.: 4501864926
Document #: 52372052-001
Folio #: RDIAQRTY006

Customer

RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON TX 77012
USANALYTICAL INFORMATION Gas Type : SO₂, BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: ALM049351
Cylinder Pressure: 2000 PSIG

Certification Date: 21Oct2013

Exp. Date: 22Oct2021
Batch No: SBO0079337

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY (ABSOLUTE / RELATIVE)	
SULFUR DIOXIDE	1,990	PPM	12.	PPM / 0.6 %
NITROGEN		BALANCE		

TRACEABILITY

REFERENCE STANDARD

COMPONENT	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE
SULFUR DIOXIDE	2402.0000 PPM	14.0000 PPM	ALM063514	NTRM 1664	03Nov2017

ANALYTICAL METHOD

1st Analysis: 14Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	1991. PPM

2nd Analysis: 21Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	1991. PPM

Special Notes:

1980.00 PPM SO₂ (1800-2100 ACCEPTABLE), BALANCE NITROGEN 1980.00 PPM SO₂ (1800-2100 ACCEPTABLE), BALANCE NITROGEN
EPA CEMS PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY:

THUAN TRAN



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist
Stack SO₂ Analyzer

LOW

Unit Number (Circle One):

2

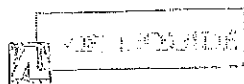
88

Date: 10/10/14 Time: 12:47 am
Serial Number: VE-920-8700-2

Technician: Enrique Nieto
Signature: Enrique Nieto

Cylinder ID number	ALM009085		CC58452			
Date of Certification	23 OCT. 2013		22 OCT. 2013			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA 1480 PSI		EPA 1500 PSI			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	127	280	127	280	127	280
CEM Response value C_m (ppm)	129	283	127	280	126	279
Accuracy A (% or ppm)	1.575	1.071	0.0	0.0	-0.787	-0.357

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS

Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013
AIR LIQUIDE AMERICA SPECIALTY GASES LLC
P332 DICE ROAD
SANTA FE SPRINGS, CA 90670-2516

P.O. No.: 4501864926
Document #: 52372052-004
Folio #: RDIAQRTY003

Customer
RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION Gas Type : SO₂, BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: ALM009085 Certification Date: 23Oct2013 Exp. Date: 24Oct2021
Cylinder Pressure: 2000 PSIG Batch No: SBO0079450

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY (ABSOLUTE / RELATIVE)
SULFUR DIOXIDE	127 PPM	1.0 PPM / 0.8 %
NITROGEN	BALANCE	

TRACEABILITY

REFERENCE STANDARD	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/CRM SAMPLE	EXP. DATE
COMPONENT	100.4000 PPM	0.8000 PPM	KAL003572	NTRM 1694	24Jan2018
SULFUR DIOXIDE					

ANALYTICAL METHOD

1st Analysis: 15Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	26Sep2013	126.8 PPM

2nd Analysis: 23Oct2013

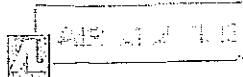
COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	126.9 PPM

Special Notes:

125.00 PPM SO₂ (100-150 PPM ACCEPTABLE), BALANCE NITROGEN EPA CEMS GRADE PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY:

THUAN TRAN



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS
Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013
AIR LIQUIDE AMERICA SPECIALTY GASES LLC
8832 DICE ROAD
SANTA FE SPRINGS, CA 90670-2516

P.O. No.: 4501864926
Document #: 52372052-003
Folio #: RDIAQRTY004

Customer
RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION Gas Type : SO₂, BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1, EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: CC58452 Certification Date: 22Oct2013 Exp. Date: 23Oct2021
Cylinder Pressure: 2000 PSIG Batch No: SBO0079448

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY (ABSOLUTE / RELATIVE)
SULFUR DIOXIDE	280 PPM	2. PPM / 0.7 %
NITROGEN	BALANCE	

TRACEABILITY

REFERENCE STANDARD	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE
COMPONENT					
SULFUR DIOXIDE	255.3000 PPM	2.0000 PPM	AAL072952	NTRM 0260	20May2016

ANALYTICAL METHOD

1st Analysis: 14Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	279.6 PPM

2nd Analysis: 22Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	280.6 PPM

Special Notes: 275.00 PPM SO₂ (250-300 PPM ACCEPTABLE), BALANCE NITROGEN EPA CEMS GRADE PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY: THUAN TRAN



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist
Stack SO₂ Analyzer

02

Unit Number (Circle One):

2

(8)

Date: 10/9/14 Time: 10:24pm
Serial Number: VE-920-8700-2

Technician: Enrique Nieto
Signature: Enrique Nieto

Cylinder ID number	CC152088		CC51515			
Date of Certification	25 OCT. 2013		25 OCT. 2013			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA 1450 PSI		EPA 2000 PSI			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	5.07	15.0	5.07	15.0	5.07	15.0
CEM Response value C_m (ppm)	4.48	14.4	4.51	14.4	4.48	14.4
Accuracy A (% or ppm)	-11.637	-4.0	-11.045	-4.0	-11.637	-4.0

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS

Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
8832 DICE ROAD
SANTA FE SPRINGS, CA 90670-2516

P.O. No.: 4501864926
Document #: 52372226-001
Folio #: RDIA018

Customer

RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION Gas Type : O₂,BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: CC51515
Cylinder Pressure: 2000 PSIG

Certification Date: 25Oct2013

Exp. Date: 26Oct2021
Batch No: SBO0079703

COMPONENT

CERTIFIED CONCENTRATION (Moles)
15.0 %
BALANCE

ACCURACY (ABSOLUTE / RELATIVE)
0.11 % / 0.7 %

OXYGEN
NITROGEN

TRACEABILITY

REFERENCE STANDARD

COMPONENT
OXYGEN

CONCENTRATION
20.9500 %

UNCERTAINTY
0.1300 %

CYLINDER
K016558

TYPE/SRM SAMPLE
NTRM 2659

EXP. DATE
14May2018

ANALYTICAL METHOD

1st Analysis: 25Oct2013

COMPONENT
OXYGEN

INSTRUMENT
HP/5890F/3336A60154

ANALYTICAL/PRINCIPLE
TCD&TCD

CALIBRATED
25Oct2013

CONCENTRATION
14.97 %

Special Notes: 15% (+/- 5%) OXYGEN, BALANCE NITROGEN EPA PROTOCOL - written certs & tags Rhodia

APPROVED BY: _____

DC



Eco Services - Houston/Baton Rouge

Quarterly Cylinder Gas Audit Checklist T.G. OUTLET
Stack SO₂ Analyzer

Unit Number (Circle One):

(2)

8

Date: 1/16/15 Time: 2:10 pm
Serial Number: VE-920-10628-1

Technician: E. Nieto / D. Garcia
Signature: [Signature]

Cylinder ID number	ALMD29933		ALM009367			
Date of Certification	OCT. 24, 2021		OCT. 23, 2021			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Protocol 1		EPA Protocol 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	127	280	127	280	127	280
CEM Response value C_m (ppm)	126	282	129	284	131	286
Accuracy A (% or ppm)	-0.787	0.714	1.575	1.429	3.150	2.143

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



SAFETY

Air Liquide America
Specialty Gases



CLASS
Gaseous

SANTA FE SPRING

Phone: 800-223-2212

Fax: 505-164-2262

OF ACCURACY

Vendor: 6.2
SPECIALTY GASES
SANTA FE SPRING

Customer: OREHOOM
Batch No: 55075447

Protocol for Assay & Certification of Gaseous Calibration Gas is
this standard if pressure is less than 100 psig.

093
SIG
Exp. Date: 22Oct2013
Batch No: 55075447

CERTIFIED CONCENTRATION (Moles)
280 PPM
BALANCE
ACCURACY (ABSOLUTE / RELATIVE)
2.0 / 0.7 %

NAME	CONC	UNIT	DATE	TYPE	EXP. DATE
SULFUR DIOXIDE	250	PPM	20May2016	STANDARD	

ANALYST: 2013
CONCENTRATION
ANALYST: 2013
DATE: 20May2016

ALIN009367



AIR LIQUIDE

Air Liquide America
Specialty Gases LLC

Intertek

COMPLIANCE CLASS

Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013
AIR LIQUIDE AMERICA SPECIALTY GASES LLC
8832 DICE ROAD
SANTA FE SPRINGS, CA 90670-2516P.O. No.: 4501864826
Document #: 52372052-004
Photo #: RDIAQRTY003Customer
RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON TX 77012
USANALYTICAL INFORMATION Gas Type : SO₂, BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1, EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: ALM029933 Certification Date: 23Oct2013 Exp. Date: 24Oct2021
Cylinder Pressure: 2000 PSIG Batch No: SB00079449

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY (ABSOLUTE / RELATIVE)	
	127	PPM	1.0	PPM / 0.8 %
SULFUR DIOXIDE				
NITROGEN		BALANCE		

TRACEABILITY

REFERENCE STANDARD	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE		
COMPONENT	100.400G	PPM	0.3000	PPM	KAL003672	NTRM 1694	24Jan2018
SULFUR DIOXIDE							

ANALYTICAL METHOD

1st Analysis: 16Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FIR/2030/001785245	FTIR	25Sep2013	126.7 PPM

2nd Analysis: 23Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FIR/2030/001785245	FTIR	25Sep2013	126.8 PPM

Special Notes:

125.00 PPM SO₂ (100-150 PPM ACCEPTABLE), BALANCE NITROGEN EPA CEMS GRADE PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY:

THUAN TRAN



Eco Services - Houston/Baton Rouge

Quarterly Cylinder Gas Audit Checklist T.G. OUTLET
Stack SO₂ Analyzer

Unit Number (Circle One):

2

8

Date: 11/6/15 Time: 3:02 pm
Serial Number: VE-920-10628-1

Technician: E. Nieto / D. Garcia
Signature: [Signature]

Cylinder ID number	CC 243058		CC 83040			
Date of Certification	OCT. 23, 2021		OCT. 22, 2021			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Protocol 1		EPA Protocol 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	906	2000	906	2000	906	2000
CEM Response value C_m (ppm)	928	1978	937	1980	938	1979
Accuracy A (% or ppm)	2.428	-1.100	3.422	-1.000	3.532	-1.050

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



Air Liquide America
Specialty Gases LLC



Intertek

COMPLIANCE CLASS

Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013
AIR LIQUIDE AMERICA SPECIALTY GASES LLC
8832 DICE ROAD
SANTA FE SPRINGS, CA 90670-2516

P.O. No.: 4501864926
Document #: 52372052-001
Folio #: RDIAQRTY006

Customer
RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION Gas Type : SO₂, BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1, EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: CC83040
Cylinder Pressure: 2000 PSIG

Certification Date: 21Oct2013

Exp. Date: 22Oct2021
Batch No: SB00079338

COMPONENT
SULFUR DIOXIDE
NITROGEN

CERTIFIED CONCENTRATION (Moles)
2,000 PPM
BALANCE

ACCURACY (ABSOLUTE / RELATIVE)
12. PPM / 0.6 %

TRACEABILITY

REFERENCE STANDARD

COMPONENT
SULFUR DIOXIDE

CONCENTRATION
2402.0000 PPM

UNCERTAINTY
14.0000 PPM

CYLINDER
ALM063514

TYPE/SRM SAMPLE
NTRM 1684

EXP. DATE
03Nov2017

ANALYTICAL METHOD

1st Analysis: 14Oct2013

COMPONENT
SULFUR DIOXIDE

INSTRUMENT
MKS-FTIR/2030/001785245

ANALYTICAL/PRINCIPLE
FTIR

CALIBRATED
25Sep2013

CONCENTRATION
1997. PPM

2nd Analysis: 21Oct2013

COMPONENT
SULFUR DIOXIDE

INSTRUMENT
MKS-FTIR/2030/001785245

ANALYTICAL/PRINCIPLE
FTIR

CALIBRATED
25Sep2013

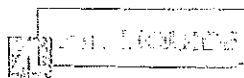
CONCENTRATION
1994. PPM

Special Notes:

1980.00 PPM SO₂ (1800-2100 ACCEPTABLE), BALANCE NITROGEN 1980.00 PPM SO₂ (1800-2100 ACCEPTABLE), BALANCE NITROGEN
EPA CEMS PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY:

THUAN TRAN



Air Liquide America
Specialty Gases LLC



COMPLIANCE CLASS
Guaranteed +/- 2% Accuracy

8832 DICE ROAD, SANTA FE SPRINGS, CA 90670-2516

Phone: 800-323-2212

Fax: 562-464-5262

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A52013

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
8832 DICE ROAD
SANTA FE SPRINGS, CA 90670-2516

P.O. No.: 4501864926
Document #: 52372062-002
Folio #: RDIAQRTY005

Customer

RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON TX 77012
US

ANALYTICAL INFORMATION Gas Type : SO₂, BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1. EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: CC243058
Cylinder Pressure: 2000 PSIG

Certification Date: 22Oct2013

Exp. Date: 23Oct2021
Batch No: SB00079445

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY (ABSOLUTE / RELATIVE)	
SULFUR DIOXIDE	906	PPM	7	PPM / 0.8 %
NITROGEN		BALANCE		

TRACEABILITY

REFERENCE STANDARD

COMPONENT	CONCENTRATION	UNCERTAINTY	CYLINDER	TYPE/SRM SAMPLE	EXP. DATE
SULFUR DIOXIDE	975.0000 PPM	7.0000 PPM	KAL003179	NTRM 16J2	01Jun2016

ANALYTICAL METHOD

1st Analysis: 14Oct2013

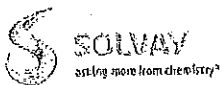
COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	905.5 PPM

2nd Analysis: 22Oct2013

COMPONENT	INSTRUMENT	ANALYTICAL/PRINCIPLE	CALIBRATED	CONCENTRATION
SULFUR DIOXIDE	MKS-FTIR/2030/001785245	FTIR	25Sep2013	905.8 PPM

Special Notes: 900.00 PPM SO₂ (800-1000 PPM ACCEPTABLE), BALANCE NITROGEN EPA CEMS GRADE PROTOCOL WRITTEN CERT & TAGS TO RHODIA

APPROVED BY: THUAN TRAN



Eco Services - Houston

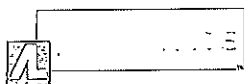
Quarterly Cylinder Gas Audit Checklist MGB SO₂ Analyzer

Date: 1/20/2015 Time: 7:11 PM
 Serial Number: 4338

Technician: Marcus Gonzalez
 Signature: [Signature]

Cylinder ID number	CC196449		ALM046889			
Date of Certification	07 Oct 2013		07 Oct 2013			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Protocol 1		EPA Protocol 1		EPA Protocol 1	
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	3.75	8.24	3.75	8.24	3.75	8.24
CEM Response value C_m (ppm)	3.70	8.14	3.83	8.34	4.07	8.61
Accuracy A (% or ppm)	-1.333	-1.214	2.133	1.214	8.533	4.490

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



Air Liquide America
Specialty Gases LLC



Single-Certified Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48063

Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard

Product Information

Document #: 52384839-002
Item No.: M374501-P-30AL
P.O. No.: 4501864926

Cylinder Number: ALM046889
Cylinder Size: 30AL
Certification Date: 07Oct2013
Expiration Date: 08Oct2016
Lot Number: TRO0094111

Customer

RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON, TX 77012
US

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)	Accuracy (+/-%)
SULFUR DIOXIDE NITROGEN	3.75 % BALANCE	2

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY:

ROBERT LESNIAK

DATE:

10-7-13



Air Liquide America
Specialty Gases LLC



Single-Certified Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48063

Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard

Product Information

Document # : 52384839-003
Item No.: M374501-P-30AL
P.O. No.: 4501864926

Cylinder Number: CC196449
Cylinder Size: 30AL
Certification Date: 07Oct2013
Expiration Date: 08Oct2016
Lot Number: TRO0094123

Customer

RHODIA INC. STOREROOM
8615 MANCHESTER
HOUSTON, TX 77012
US

CERTIFIED CONCENTRATION

Component Name

**Concentration
(Moles)**

**Accuracy
(+/-%)**

SULFUR DIOXIDE
NITROGEN

8.24 %
BALANCE

2

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY:

ROBERT LESNIAK

DATE:

441890 v3

A1/A1/EN

110000460901
RCRA

Eco Services Operations LLC
Houston Plant

RECEIVE

MAR 25 2015

CERTIFIED MAIL: RETURN RECEIPT REQUESTED (7011 2000 0001 4575 2313)

Toxics & Inspection
Coordination Branch

March 2, 2015

Mr. Jeff Robinson
Air Permits Section
Mail Code 6PD-R
U.S. EPA - Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

REPORT
SUBPART FF

RE: Benzene Waste Operations NESHAP
Industrial Solid Waste Registration No. 31019
Hazardous Waste Permit No. HW-50095
40 CFR Part 61, Subpart FF
EPA ID No. TXD008099079

Dear Mr. Robinson:

Enclosed please find a report for the 2014 calendar year Benzene Waste Operations summary for Eco Services Operations LLC's Houston, Texas facility. Eco Services operates a commercial industrial furnace permitted under 40 CFR Part 264 and Part 266 Subpart H by the State of Texas. This report is required under 40 CFR Part 61, Subpart FF-National Emission Standard for Benzene Waste Operations.

We have reviewed the status of each waste stream subject to regulation under this standard. In accordance with section 61.355(a), the Total Annual Benzene (TAB) quantity from this facility's waste operations was 1.8 megagrams for the operating year 2014.

Quarterly fugitive emission monitoring did not identify any emissions >500 ppm as defined in 40 CFR 61.343(a)(1)(i)(A).

Eco Services documented all daily visual inspections of the hazardous waste operations area as required in the quarterly inspection requirement as defined in 40 CFR 61.343(c). Visual inspections included sight, smell and sound observations and found no leaks in 2014.

If there are any questions, or if further information is required, please contact me at 713-924-1408.

Sincerely,

A handwritten signature in blue ink, appearing to read "W. F. Dickerson".

W. F. Dickerson
Environmental Manager

Attachment

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012

CC: Air Section Manager, TCEQ, Region 12, Houston
Mr. Bob Allen, Director, Environmental Public Health Division,
Harris County Public Health and Environmental Services
Mr. Arturo Blanco, City of Houston, Bureau of Air Control

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012

Eco Services Operations LLC Houston Plant
Calendar Year 2014 Annual Benzene Report

40 CFR 61 Subpart FF - Benzene Annual Report

61.357(a)(2)		61.357(a)(3)(i)	61.357(a)(3)(ii)	61.357(a)(3)(iii)	61.357(a)(3)(iv)	61.357(a)(3)(v)	61.357(a)(3)(vi)
Waste Stream	Controlled Benzene Emissions	Water Content of Waste Stream >10%	Waste Stream a Process Wastewater Stream, Product Tank Drawdown, or Landfill Leachate	Annual Waste Quantity (Mg/yr)	Range of Benzene Concentration (ppmw)	Annual Average Flow Weighted Benzene Concentration (ppmw)	Annual Benzene Quantity (Mg/yr)
9109003	Y	Y	Y	0.0	0-10	10	0.0
9104004	Y	N	N	0.1	10-200	200	0.0
0706008	Y	N	N	3.6	0-10,000	10,000	0.0
0312002	Y	N	N	35.7	10,000-50,000	50,000	1.8
1205001	Y	N	N	0.0	0-10	10	0.0
0912006	Y	N	N	1.8	0-1,000	1,000	0.0
9405021	Y	Y	Y	0.2	10-2,000	2,000	0.0
TOTAL							1.8

Y=Yes, N=No Y=Yes, N=No Y=Yes, N=No

Mg/yr



Solvay USA Inc.
Houston Plant

CERTIFIED MAIL: Return Receipt Requested (7011 2000 0001 4575 0517)

RECEIVE

January 27, 2014

Mr. Jeff Robinson
Chief, Air Permits Section (6PD-R)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

JAN 21 2014

Air/Toxics & Inspection
Coordination Branch
6EN-A

Re: Solvay Benzene NESHAP, Subpart FF, Quarterly Report
October 1, 2013 to December 31, 2013
EPA ID No.: TXD008099079

Dear Mr. Robinson:

Solvay USA Inc., in Houston, Texas owns and operates a Sulfuric Acid Regeneration Plant. In addition to the regeneration of sulfuric acid, the plant incinerates hazardous waste, under the conditions of the facility's RCRA Part B Permit (HW-50095).

Solvay receives benzene waste streams from offsite customers to use as fuel in the Sulfuric Acid Regeneration Unit No. 2 (SARU) industrial furnace which is permitted under 40 CFR 266 Subpart H. Thus, the SARU industrial furnace is a treatment process for the waste and are exempt from testing and monitoring per 40 CFR 61.348(d)(1) and 61.354(a). The benzene waste streams may be stored in one or more of six treatment services (TS) storage tanks prior to treatment. The tanks are vented to the SARU industrial furnace for vapor control per 40 CFR 61.343(a). The TS Vapor Combustor provides backup vapor control for the six TS tanks. The site has no oil-water separators or individual drain systems used to convey benzene waste.

Solvay submits this quarterly report in accordance with the reporting requirements of 40 CFR 61.357:

- Pursuant to 40 CFR 61.357(d)(6), Solvay USA Inc. hereby certifies that all required inspections were performed. The required inspections are itemized in Table 1.
- Pursuant to 61.357(d)(7)(iv)(G), there has been no change in the location at which the tank vent stream is introduced into the primary control device flame zone, the SARU industrial furnace.

Solvay USA Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012

- Pursuant to 40 CFR 61.357(d)(7)(iv)(A), there have been no 3-hour periods during which the average temperature of the gas stream in the combustion zone for the TS Vapor Combustor was <50°F below design temperature when being used as the control device for the TS storage tanks.

Please contact Floyd Dickerson at (713) 924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Mr. Arturo Blanco, Bureau of Air Quality Control, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

4/5 3215 v8 C AI/AI/CO 110000460901
TX 079 Vol. 8



RECEIVE

Eco Services Operations LLC
Houston Plant

FEB - 5 2015

Certified Mail Return Receipt Requested (7011 2970 0000 3516 7784)

Air Toxics & Inspection
Coordination Branch
6EN-A

January 29, 2014

Compliance Assurance and Enforcement Division (6EN)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Subject: Eco Services
Houston, Texas Plant
NSPS Kb Semiannual Report – 2nd Half 2014
Permit No. O-03049

To Whom It May Concern:

Per the 40 CFR Part 60 (NSPS) Subpart Kb operating plan for the Houston plant, the following tanks are subject to vapor control, or assumed to be subject to vapor control, per NSPS Subpart Kb.

Tank No.	Description	Contents	Control Device
B-1 B-2	Treatment Services (TS) Tanks	Volatile organic liquids (VOL)	Regeneration Unit No.2 Furnace with TS Vapor Combustor (TSVC) as backup
Tk 48 Tk 49 Tk 53 Tk 56* Tk 78*	Spent Acid (SA) Tanks	Spent sulfuric acid with potential for containing volatile organic liquids	Regeneration Unit No.2 Furnace with Spent Acid Vapor Combustor as backup.

**Available information indicates that tanks 56 and 78 have not been reconstructed or modified since 1984, but are listed for completeness.*

40 CFR 60.7 requires a semiannual report for these tanks.

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012



Eco Services Operations LLC
Houston Plant
Spent Acid Tanks Summary Report

Pollutant	VOC
Reporting period dates:	7/1/2014 to 12/31/2014
Company:	Eco Services LLC Houston site
Emission Limitation:	25.93 lbs/hr when venting to secondary APVC (vapor combustor)
Address:	8615 Manchester Houston, TX 77012
Monitor Manufacturer and Model No:	Not Applicable
Date of Latest CMS Certification or Audit:	Not Applicable
Process Unit Description:	Spent Acid Tank Farm
Total source operating time in reporting period:	4,344 hours
Duration of excess emissions in reporting period due to:	
a. Startup/shutdown	0.0 hours
b. Control equipment problems	0.0 hours
c. Process problems	0.0 hours
d. Other known causes	0.0 hours
e. Unknown causes	0.0 hours
Total duration of excess emission	0.0 hours
Total duration of excess emissions	0.0 %



Eco Services Operations LLC
Houston Plant
TS Tanks Summary Report

Pollutant	VOC
Reporting period dates:	7/1/2014 to 12/31/2014
Company:	Eco Services LLC Houston site
Emission Limitation:	22.22 lbs/hr when venting to TSVC
Address:	8615 Manchester Houston, TX 77012
Monitor Manufacturer and Model No:	Not Applicable
Date of Latest CMS Certification or Audit:	Not Applicable
Process Unit Description:	Treatment Services Tank Farm
Total source operating time in reporting period:	4,344 hours
Duration of excess emissions in reporting period due to:	
f. Startup/shutdown	0 hours
g. Control equipment problems	0.0 hours
h. Process problems	0.0 hours
i. Other known causes	0.25 hours
j. Unknown causes	0 hours
Total duration of excess emission	0.25 hours
Total duration of excess emissions	0.006 %

If you have any questions concerning this matter, please call David Laurie at (713) 924-1484.

Sincerely,

A handwritten signature in blue ink that reads "William J. McConnell".

William McConnell
Plant Manager

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012



Solvay USA Inc.
Houston Plant

RECEIVED
JUL 14 2014

Air/Toxics & Inspection
Coordination Branch
6EN-A

Certified Mail; Return Receipt Requested (7011 2000 0001 4575 1392)

July 8, 2014

Mr. Jeff Robinson
Chief, Air Permits Section
6PD-R
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: HON Semiannual Report per 40 CFR 63.152(c)
TCEQ Identification Nos.: RN100220581/CN604514315

Dear Mr. Robinson:

Solvay USA Inc. (Solvay) is an offsite treatment facility for 40 CFR Part 63 Subpart G (HON) Group 1 wastewater streams and residuals. Solvay submitted a letter on August 6, 1998 certifying that it will manage and treat any HON-regulated Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with the applicable requirements in 40 CFR 63.133 through 63.147. On November 8, 2006, Solvay submitted the Notification of Compliance Status (NCS) Report per 40 CFR 63.152(b). Per 40 CFR 63.146(c) and 63.152(c), semiannual reports are also required. This submittal includes the semiannual report for the period of January 1 to June 30, 2014.

Specific elements of the semi-annual report are listed below:

63.146(c) - For each tank storing HON Group 1 wastewater or residuals, the results of each inspection in which a control equipment failure (a gasket, joint, lid, cover, or door has a crack or gap, or is broken) was identified. Include the date of the inspection, identification of each waste management unit (tank) in which a control equipment failure was detected, description of the failure, and description of the nature of and date the repair was made.

HON Group 1 wastewater and residuals may be stored in one or more of the six (6) Treatment Services (TS) tanks. There were no control equipment failures identified for these tanks in the reporting period.

63.146(d) - Treatment process monitoring data.

The treatment process is a RCRA unit and is exempt from monitoring per 63.138(h).

Solvay USA Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012

63.146(e)(1), Table 20 item (1) - For each tank storing HON Group 1 wastewater or residuals that vents to a thermal incinerator for vapor control, report all daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected.

The TS tanks normally vent to the Regeneration Unit No. 2 (Regen 2) sulfuric acid furnace which is exempt from monitoring per 63.139(d)(4)(iv). In the event that Regen 2 is unavailable, tank vapors are routed to the Treatment Services Vapor Combustor (TSVC). The TSVC minimum combustion temperature is 1,500°F per operating permit. During this reporting period, there were no instances of the daily average TSVC combustion temperature being under 1,500°F while TS tanks were venting to it. There were no days when insufficient monitoring data were collected during this reporting period.

63.146(e)(1), Table 20 item (8)(i) and 63.148(j)(2) - For closed vent systems used to convey HON wastewater tank vapors to a control device, any bypass valves and lines must be equipped with a flow indicator or car-seal. Report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor (flow indicator) is not operating.

The vent stream was not diverted to the atmosphere this reporting period. We do not use flow indicators for this purpose.

63.146(e)(1), Table 20 item (8)(ii) and 63.148(j)(3) - Report the times and durations of any periods when the bypass valves are moved to the diverting position, the seal has been changed, the seal mechanism is broken, or the key to unlock the bypass line valve was checked out.

There were no bypass valve or car-seal abnormalities this reporting period. We do not use lock-and-key mechanisms for this purpose.

Please contact Floyd Dickerson at 713-924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Mr. Arturo Blanco, Bureau of Air Quality Control, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

45-3215 v8

AI/AI/CO

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Solvay USA Inc.
Houston Plant

RECEIVE

AUG - 4.2014

Airtoxics & Inspection
Coordination Branch
6EN-A

Certified Mail Return Receipt Requested (7011 2000 0001 4575 1606)

July 30, 2014

Compliance Assurance and Enforcement Division (6EN)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Subject: Solvay USA Inc.
Houston, Texas Plant
NSPS Kb Semiannual Report – 1st Half 2013
Permit No. O-03049

To Whom It May Concern:

Per the 40 CFR Part 60 (NSPS) Subpart Kb operating plan for the Houston plant, the following tanks are subject to vapor control, or assumed to be subject to vapor control, per NSPS Subpart Kb.

Tank No.	Description	Contents	Control Device
B-1 B-2	Treatment Services (TS) Tanks	Volatile organic liquids (VOL)	Regeneration Unit No.2 Furnace with TS Vapor Combustor (TSVC) as backup
Tk 48 Tk 49 Tk 53 Tk 56* Tk 78*	Spent Acid (SA) Tanks	Spent sulfuric acid with potential for containing volatile organic liquids	Regeneration Unit No.2 Furnace with Spent Acid Vapor Combustor as backup.

**Available information indicates that tanks 56 and 78 have not been reconstructed or modified since 1984, but are listed for completeness.*

40 CFR 60.7 requires a semiannual report for these tanks.

Solvay Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Spent Acid Tanks Summary Report

Pollutant	VOC
Reporting period dates:	1/1/2014 to 6/30/2014
Company:	Solvay USA Inc. Houston site
Emission Limitation:	25.93 lbs/hr when venting to secondary APVC (vapor combustor)
Address:	8615 Manchester Houston, TX 77012
Monitor Manufacturer and Model No:	Not Applicable
Date of Latest CMS Certification or Audit:	Not Applicable
Process Unit Description:	Spent Acid Tank Farm
Total source operating time in reporting period:	4,344 hours
Duration of excess emissions in reporting period due to:	
a. Startup/shutdown	0.0 hours
b. Control equipment problems	0.67 hours
c. Process problems	6.0 hours
d. Other known causes	0.0 hours
e. Unknown causes	0.0 hours
Total duration of excess emission	6.67 hours
Total duration of excess emissions	0.15 %

Solvay Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012

TS Tanks Summary Report

Pollutant	VOC
Reporting period dates:	1/1/2014 to 6/30/2014
Company:	Solvay USA Inc. Houston site
Emission Limitation:	22.22 lbs/hr when venting to TSVC
Address:	8615 Manchester Houston, TX 77012
Monitor Manufacturer and Model No:	Not Applicable
Date of Latest CMS Certification or Audit:	Not Applicable
Process Unit Description:	Treatment Services Tank Farm
Total source operating time in reporting period:	4,344 hours
Duration of excess emissions in reporting period due to:	
f. Startup/shutdown	0 hours
g. Control equipment problems	1.75 hours
h. Process problems	0.0 hours
i. Other known causes	0.0 hours
j. Unknown causes	0 hours
Total duration of excess emission	1.75 hours
Total duration of excess emissions	0.04 %

If you have any questions concerning this matter, please call David Laurie at (713) 924-1484.

Sincerely,



William McConnell
Plant Manager
Solvay USA Inc.

Attachment

Solvay Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Cc: Executive Director, MC-109
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Air Section Manager
Texas Commission on Environmental Quality
5425 Polk Avenue, Suite H
Houston, TX 77023-1486

Bureau Chief
Bureau of Air Quality Control
City of Houston
7411 Park Place Blvd.
Houston, TX 77087-4441

Director
Harris County Public Health and Environmental Services
Environmental Public Health Division
101 S. Richey Suite G
Pasadena, TX 77506

Solvay Inc.
Houston Plant
8615 Manchester Street
Houston, TX 77012



Eco Services Operations LLC
Houston Plant

RECEIVED

APR 29 2015

Air Toxics & Inspection
Coordination Branch
6EN-A

CERTIFIED MAIL: Return Receipt Requested (7011 2000 0001 4575 2375)

April 23, 2015

Mr. Jeff Robinson
Chief, Air Permits Section (6PD-R)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Eco Services Operations LLC Benzene NESHAP, Subpart FF, Quarterly Report
January 1, 2015 to March 31, 2015
EPA ID No.: TXD008099079

Dear Mr. Robinson:

Eco Services Operations LLC, formally Solvay USA Inc., in Houston, Texas owns and operates a Sulfuric Acid Regeneration Plant. In addition to the regeneration of sulfuric acid, the plant incinerates hazardous waste, under the conditions of the facility's RCRA Part B Permit (HW-50095).

Eco Services receives benzene waste streams from offsite customers to use as fuel in the Sulfuric Acid Regeneration Unit No. 2 (SARU) industrial furnace which is permitted under 40 CFR 266 Subpart H. Thus, the SARU industrial furnace is a treatment process for the waste and are exempt from testing and monitoring per 40 CFR 61.348(d)(1) and 61.354(a). The benzene waste streams may be stored in one or more of six treatment services (TS) storage tanks prior to treatment. The tanks are vented to the SARU industrial furnace for vapor control per 40 CFR 61.343(a). The TS Vapor Combustor provides backup vapor control for the six TS tanks. The site has no oil-water separators or individual drain systems used to convey benzene waste.

Eco Services submits this quarterly report in accordance with the reporting requirements of 40 CFR 61.357:

- Pursuant to 40 CFR 61.357(d)(6), Eco Services Operations LLC hereby certifies that all required inspections were performed. The required inspections are itemized in Table 1.
- Pursuant to 61.357(d)(7)(iv)(G), there has been no change in the location at which the tank vent stream is introduced into the primary control device flame zone, the SARU industrial furnace.

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012

Mr. Robinson

Page 2

- Pursuant to 40 CFR 61.357(d)(7)(iv)(A), there have been no 3-hour periods during which the average temperature of the gas stream in the combustion zone for the TS Vapor Combustor was <50°F below design temperature when being used as the control device for the TS storage tanks.

Please contact Floyd Dickerson at (713) 924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Mr. Arturo Blanco, Bureau of Air Quality Control, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

Table 1

**Eco Services Operations LLC
Houston, Texas
Benzene Waste NESHAP Inspection Requirements
For Quarterly Period Ending: March 31, 2015**

Inspection	Was inspection performed?	Exceptions Noted
Annual Method 21 inspections of tank covers and openings per 61.343(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of tank covers and openings per 61.343(c)	x Yes Except as Noted	
Initial and annual Method 21 inspections of containers per 61.345(a)(1)	x Yes Except as Noted	
Initial and quarterly visual inspections of containers per 61.345(b)	x Yes Except as Noted	
Annual Method 21 inspections of treatment system openings (Regeneration Unit No. 2) per 61.348(e)(3)(ii)	x Yes Except as Noted	
Annual Method 21 inspections of closed vent systems (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of closed vent systems and control devices (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace, including the vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(f)	x Yes Except as Noted	
Daily inspections of control device continuous monitoring data (temperature of TS vapor combustor and "selected parameter" on Regeneration Unit No. 2 industrial furnace) per 61.354(c)	x Yes Except as Noted	

Note: Where annual inspections are listed, they were not necessarily performed during this quarterly reporting period, but have been performed in the last year.



Eco Services Operations LLC
Houston Plant

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RECEIVE

JAN 16 2015

Air Toxics & Inspection
Coordination Branch
6EN-A

Certified Mail; Return Receipt Requested (7011 2970 0000 3521 0596)

January 12, 2015

Mr. Jeff Robinson
Chief, Air Permits Section
6PD-R
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Rhodia
↓
Solvay
↓
Eco services

Re: HON Semiannual Report per 40 CFR 63.152(c)
TCEQ Identification Nos.: RN100220581/CN604683482

Dear Mr. Robinson:

Eco Services Operations LLC (Eco Services), formally Solvay USA Inc., is an offsite treatment facility for 40 CFR Part 63 Subpart G (HON) Group 1 wastewater streams and residuals. Eco Services submitted a letter on August 6, 1998 certifying that it will manage and treat any HON-regulated Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with the applicable requirements in 40 CFR 63.133 through 63.147. On November 8, 2006, Eco Services submitted the Notification of Compliance Status (NCS) Report per 40 CFR 63.152(b). Per 40 CFR 63.146(c) and 63.152(c), semiannual reports are also required. This submittal includes the semiannual report for the period of July 1 to December 31, 2014.

Specific elements of the semi-annual report are listed below:

63.146(c) - For each tank storing HON Group 1 wastewater or residuals, the results of each inspection in which a control equipment failure (a gasket, joint, lid, cover, or door has a crack or gap, or is broken) was identified. Include the date of the inspection, identification of each waste management unit (tank) in which a control equipment failure was detected, description of the failure, and description of the nature of and date the repair was made.

HON Group 1 wastewater and residuals may be stored in one or more of the six (6) Treatment Services (TS) tanks. There were no control equipment failures identified for these tanks in the reporting period.

63.146(d) - Treatment process monitoring data.

The treatment process is a RCRA unit and is exempt from monitoring per 63.138(h).

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012

63.146(e)(1), Table 20 item (1) - For each tank storing HON Group 1 wastewater or residuals that vents to a thermal incinerator for vapor control, report all daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected.

The TS tanks normally vent to the Regeneration Unit No. 2 (Regen 2) sulfuric acid furnace which is exempt from monitoring per 63.139(d)(4)(iv). In the event that Regen 2 is unavailable, tank vapors are routed to the Treatment Services Vapor Combustor (TSVC). The TSVC minimum combustion temperature is 1,500°F per operating permit. During this reporting period, there were no instances of the daily average TSVC combustion temperature being under 1,500°F while TS tanks were venting to it. There were no days when insufficient monitoring data were collected during this reporting period.

63.146(e)(1), Table 20 item (8)(i) and 63.148(j)(2) – For closed vent systems used to convey HON wastewater tank vapors to a control device, any bypass valves and lines must be equipped with a flow indicator or car-seal. Report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor (flow indicator) is not operating.

The vent stream was not diverted to the atmosphere this reporting period. We do not use flow indicators for this purpose.

63.146(e)(1), Table 20 item (8)(ii) and 63.148(j)(3) - Report the times and durations of any periods when the bypass valves are moved to the diverting position, the seal has been changed, the seal mechanism is broken, or the key to unlock the bypass line valve was checked out.

There were no bypass valve or car-seal abnormalities this reporting period. We do not use lock-and-key mechanisms for this purpose.

Please contact Floyd Dickerson at 713-924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Mr. Arturo Blanco, Bureau of Air Quality Control, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department



Eco Services Operations LLC
Houston Plant

A1/A1/CO

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Certified Mail; Return Receipt Requested (7011 2000 0001 4575 2030) AUG 6 2015

July 30, 2015

Air Toxics & Inspection
Coordination Branch
GEN-A

Mr. Jeff Robinson
Chief, Air Permits Section
6PD-R
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: HON Semiannual Report per 40 CFR 63.152(c)
TCEQ Identification Nos.: RN100220581/CN604683482

Dear Mr. Robinson:

Eco Services Operations LLC (Eco Services), formally Solvay USA Inc., is an offsite treatment facility for 40 CFR Part 63 Subpart G (HON) Group 1 wastewater streams and residuals. Eco Services submitted a letter on August 6, 1998 certifying that it will manage and treat any HON-regulated Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with the applicable requirements in 40 CFR 63.133 through 63.147. On November 8, 2006, Eco Services submitted the Notification of Compliance Status (NCS) Report per 40 CFR 63.152(b). Per 40 CFR 63.146(c) and 63.152(c), semiannual reports are also required. This submittal includes the semiannual report for the period of January 1 to June 30, 2015.

Specific elements of the semi-annual report are listed below:

63.146(c) - For each tank storing HON Group 1 wastewater or residuals, the results of each inspection in which a control equipment failure (a gasket, joint, lid, cover, or door has a crack or gap, or is broken) was identified. Include the date of the inspection, identification of each waste management unit (tank) in which a control equipment failure was detected, description of the failure, and description of the nature of and date the repair was made.

HON Group 1 wastewater and residuals may be stored in one or more of the six (6) Treatment Services (TS) tanks. There were no control equipment failures identified for these tanks in the reporting period.

63.146(d) - Treatment process monitoring data.

The treatment process is a RCRA unit and is exempt from monitoring per 63.138(h).

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012

Mr. Jeff Robinson

Page 2

63.146(e)(1), Table 20 item (1) - For each tank storing HON Group 1 wastewater or residuals that vents to a thermal incinerator for vapor control, report all daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected.

The TS tanks normally vent to the Regeneration Unit No. 2 (Regen 2) sulfuric acid furnace which is exempt from monitoring per 63.139(d)(4)(iv). In the event that Regen 2 is unavailable, tank vapors are routed to the Treatment Services Vapor Combustor (TSVC). The TSVC minimum combustion temperature is 1,500°F per operating permit. During this reporting period, there were no instances of the daily average TSVC combustion temperature being under 1,500°F while TS tanks were venting to it. There were no days when insufficient monitoring data were collected during this reporting period.

63.146(e)(1), Table 20 item (8)(i) and 63.148(j)(2) – For closed vent systems used to convey HON wastewater tank vapors to a control device, any bypass valves and lines must be equipped with a flow indicator or car-seal. Report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor (flow indicator) is not operating.

The vent stream was not diverted to the atmosphere this reporting period. We do not use flow indicators for this purpose.

63.146(e)(1), Table 20 item (8)(ii) and 63.148(j)(3) - Report the times and durations of any periods when the bypass valves are moved to the diverting position, the seal has been changed, the seal mechanism is broken, or the key to unlock the bypass line valve was checked out.

There were no bypass valve or car-seal abnormalities this reporting period. We do not use lock-and-key mechanisms for this purpose.

Please contact Floyd Dickerson at 713-924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Director, Health and Human Services Department, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

AI/AI/CO

FRS: 110000460901

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ECOSERVICESEco Services LLC
Houston Plant**Certified Mail Return Receipt Requested (7015 1520 0003 4945 7531)****RECEIVE**

July 30, 2015

AUG 3 2015Compliance Assurance and Enforcement Division (6EN)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733Air/Toxics & Inspection
Coordination Branch
6EN-ASubject: Eco Services LLC
Houston, Texas Plant
NSPS Kb Semiannual Report – 1st Half 2015
Permit No. O-03049

To Whom It May Concern:

Per the 40 CFR Part 60 (NSPS) Subpart Kb operating plan for the Houston plant, the following tanks are subject to vapor control, or assumed to be subject to vapor control, per NSPS Subpart Kb.

Tank No.	Description	Contents	Control Device
B-1 B-2	Treatment Services (TS) Tanks	Volatile organic liquids (VOL)	Regeneration Unit No.2 Furnace with TS Vapor Combustor (TSVC) as backup
Tk 48 Tk 49 Tk 53 Tk 56* Tk 78*	Spent Acid (SA) Tanks	Spent sulfuric acid with potential for containing volatile organic liquids	Regeneration Unit No.2 Furnace with Spent Acid Vapor Combustor as backup.

**Available information indicates that tanks 56 and 78 have not been reconstructed or modified since 1984, but are listed for completeness.*

40 CFR 60.7 requires a semiannual report for these tanks.

Eco Services LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012



Eco Services LLC
Houston Plant

RECEIVE

TS Tanks Summary Report

Pollutant	VOC	AUG. 3. 2015
Reporting period dates:	1/1/2015 to 6/30/2015	
Company:	Eco Services LLC Houston site	Air Toxics & Inspection Coordination Branch
Emission Limitation:	22.22 lbs/hr when venting to TSVC	6EN-A
Address:	8615 Manchester Houston, TX 77012	
Monitor Manufacturer and Model No:	Not Applicable	
Date of Latest CMS Certification or Audit:	Not Applicable	
Process Unit Description:	Treatment Services Tank Farm	
Total source operating time in reporting period:	4,344 hours	
Duration of excess emissions in reporting period due to:		
f. Startup/shutdown	0 hours	
g. Control equipment problems	0 hours	
h. Process problems	0.0 hours	
i. Other known causes	0.0 hours	
j. Unknown causes	0 hours	
Total duration of excess emission	0.0 hours	
Total duration of excess emissions	0.0 %	

If you have any questions concerning this matter, please call David Laurie at (713) 924-1484.

Sincerely,

William McConnell
Plant Manager
Solvay USA Inc.

Attachment

Eco Services LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012



Eco Services LLC
Houston Plant

RECEIVE

Spent Acid Tanks Summary Report

Pollutant	VOC
Reporting period dates:	1/1/2015 to 6/30/2015
Company:	Eco Services LLC Houston site
Emission Limitation:	25.93 lbs/hr when venting to secondary APVC (vapor combustor)
Address:	8615 Manchester Houston, TX 77012
Monitor Manufacturer and Model No:	Not Applicable
Date of Latest CMS Certification or Audit:	Not Applicable
Process Unit Description:	Spent Acid Tank Farm
Total source operating time in reporting period:	4,344 hours
Duration of excess emissions in reporting period due to:	
a. Startup/shutdown	0.0 hours
b. Control equipment problems	0.00 hours
c. Process problems	322.75 hours
d. Other known causes	0.0 hours
e. Unknown causes	0.0 hours
Total duration of excess emission	322.75 hours
Total duration of excess emissions	7.5 %

AUG 3 2015

air toxics & inspection
Coordination Branch
6EN-A



Eco Services LLC
Houston Plant

Cc: Executive Director, MC-109
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Air Section Manager
Texas Commission on Environmental Quality
5425 Polk Avenue, Suite H
Houston, TX 77023-1486

Bureau Chief
Bureau of Air Quality Control
City of Houston
7411 Park Place Blvd.
Houston, TX 77087-4441

Director
Harris County Public Health and Environmental Services
Environmental Public Health Division
101 S. Richey Suite G
Pasadena, TX 77506

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AUG 3 2015

Air Toxics & Inspection
Coordination Branch
6EN-A

Eco Services LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012



Eco Services Operations LLC
Houston Plant

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USEPA, DALLAS, TX
ASSOCIATE DIRECTOR
11/0000960701
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15 NOV -9 AM 10:35
COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

CERTIFIED MAIL: Return Receipt Requested (7015 1520 0003 4945 7661)

October 29, 2015

Mr. Jeff Robinson
Chief, Air Permits Section (6PD-R)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Eco Services Operations LLC Benzene NESHAP, Subpart FF, Quarterly Report
July 1, 2015 to September 30, 2015
EPA ID No.: TXD008099079

Dear Mr. Robinson:

Eco Services Operations LLC, formally Solvay USA Inc., in Houston, Texas owns and operates a Sulfuric Acid Regeneration Plant. In addition to the regeneration of sulfuric acid, the plant incinerates hazardous waste, under the conditions of the facility's RCRA Part B Permit (HW-50095).

Eco Services receives benzene waste streams from offsite customers to use as fuel in the Sulfuric Acid Regeneration Unit No. 2 (SARU) industrial furnace which is permitted under 40 CFR 266 Subpart H. Thus, the SARU industrial furnace is a treatment process for the waste and are exempt from testing and monitoring per 40 CFR 61.348(d)(1) and 61.354(a). The benzene waste streams may be stored in one or more of six treatment services (TS) storage tanks prior to treatment. The tanks are vented to the SARU industrial furnace for vapor control per 40 CFR 61.343(a). The TS Vapor Combustor provides backup vapor control for the six TS tanks. The site has no oil-water separators or individual drain systems used to convey benzene waste.

Eco Services submits this quarterly report in accordance with the reporting requirements of 40 CFR 61.357:

- Pursuant to 40 CFR 61.357(d)(6), Eco Services Operations LLC hereby certifies that all required inspections were performed. The required inspections are itemized in Table 1.
- Pursuant to 61.357(d)(7)(iv)(G), there has been no change in the location at which the tank vent stream is introduced into the primary control device flame zone, the SARU industrial furnace.

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012

Mr. Robinson

Page 2

- Pursuant to 40 CFR 61.357(d)(7)(iv)(A), there have been no 3-hour periods during which the average temperature of the gas stream in the combustion zone for the TS Vapor Combustor was <50°F below design temperature when being used as the control device for the TS storage tanks.

Please contact Floyd Dickerson at (713) 924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Director, Health and Human Services Department, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

Table 1

**Eco Services Operations LLC
Houston, Texas
Benzene Waste NESHAP Inspection Requirements
For Quarterly Period Ending: September 30, 2015**

Inspection	Was inspection performed?	Exceptions Noted
Annual Method 21 inspections of tank covers and openings per 61.343(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of tank covers and openings per 61.343(c)	x Yes Except as Noted	
Initial and annual Method 21 inspections of containers per 61.345(a)(1)	x Yes Except as Noted	
Initial and quarterly visual inspections of containers per 61.345(b)	x Yes Except as Noted	
Annual Method 21 inspections of treatment system openings (Regeneration Unit No. 2) per 61.348(e)(3)(ii)	x Yes Except as Noted	
Annual Method 21 inspections of closed vent systems (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of closed vent systems and control devices (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace, including the vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(f)	x Yes Except as Noted	
Daily inspections of control device continuous monitoring data (temperature of TS vapor combustor and "selected parameter" on Regeneration Unit No. 2 industrial furnace) per 61.354(c)	x Yes Except as Noted	

Note: Where annual inspections are listed, they were not necessarily performed during this quarterly reporting period, but have been performed in the last year.



Eco Services Operations LLC
Houston Plant

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US EPA, DALLAS, TX
ASSOCIATE DIRECTOR

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COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

6 EN-AA

CERTIFIED MAIL: RETURN RECEIPT REQUESTED (7015 1520 0003 4945 80025)

February 29, 2016

A. / A. / CO

Mr. Jeffrey Robinson
Air Permits Section
Mail Code 6PD-R
U.S. EPA - Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

RE: Benzene Waste Operations NESHAP
Industrial Solid Waste Registration No. 31019
Hazardous Waste Permit No. HW-50095
40 CFR Part 61, Subpart FF
EPA ID No. TXD008099079

Dear Mr. Robinson:

Enclosed please find a report for the 2015 calendar year Benzene Waste Operations summary for Eco Services Operations LLC's Houston, Texas facility. Eco Services operates a commercial industrial furnace permitted under 40 CFR Part 264 and Part 266 Subpart H by the State of Texas. This report is required under 40 CFR Part 61, Subpart FF-National Emission Standard for Benzene Waste Operations.

We have reviewed the status of each waste stream subject to regulation under this standard. In accordance with section 61.355(a), the Total Annual Benzene (TAB) quantity from this facility's waste operations was 0.5 megagrams for the operating year 2015.

Quarterly fugitive emission monitoring did not identify any emissions >500 ppm as defined in 40 CFR 61.343(a)(1)(i)(A).

Eco Services documented all daily visual inspections of the hazardous waste operations area as required in the quarterly inspection requirement as defined in 40 CFR 61.343(c). Visual inspections included sight, smell and sound observations and found no leaks in 2015.

If there are any questions, or if further information is required, please contact me at 713-924-1408.

Sincerely,



W. F. Dickerson
Environmental Manager

Attachment

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012

CC: Air Section Manager, TCEQ, Region 12, Houston
Mr. Bob Allen, Director, Environmental Public Health Division,
Harris County Public Health and Environmental Services
City of Houston, Bureau of Air Control

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012

Eco Services Operations LLC
Houston, Texas
Calendar Year 2015 Annual Benzene Report

40 CFR 61 Subpart FF - Benzene Annual Report

61.357(a)(2)		61.357(a)(3)(i)	61.357(a)(3)(ii)	61.357(a)(3)(iii)	61.357(a)(3)(iv)	61.357(a)(3)(v)	61.357(a)(3)(vi)
Waste Stream	Controlled Benzene Emissions	Water Content of Waste Stream >10%	Waste Stream a Process Wastewater Stream, Product Tank Drawdown, or Landfill Leachate	Annual Waste Quantity (Mg/yr)	Range of Benzene Concentration (ppmw)	Annual Average Flow-Weighted Benzene Concentration (ppmw)	Annual Benzene Quantity (Mg/yr)
9109003	Y	Y	Y	0.0	0-10	10	0.0
9104004	Y	N	N	0.1	10-200	200	0.0
0706008	Y	N	N	0.1	0-10,000	10,000	0.0
1503002	Y	N	N	0.0	0-200	200	0.0
1409001	Y	N	N	0.0	0-1,000	1,000	0.0
0312002	Y	N	N	10.1	10,000-50,000	50,000	0.5
1205001	Y	N	N	0.0	0-10	10	0.0
0912006	Y	N	N	1.5	0-1,000	1,000	0.0
9405021	Y	Y	Y	0.3	10-2,000	2,000	0.0
Y=Yes, N=No						TOTAL	0.5
Y=Yes, N=No						Y=Yes, N=No	Mg/yr

Y=Yes, N=No Y=Yes, N=No Y=Yes, N=No

Mg/yr

11 0000460901

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US EPA, DALLAS, TX
ASSOCIATE DIRECTOR



Eco Services Operations LLC
Houston Plant

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& ENFORCEMENT DIV.

A1/A1/co

CERTIFIED MAIL: Return Receipt Requested (7015 1520 0003 4945 7890)

January 28, 2016

Mr. Jeff Robinson
Chief, Air Permits Section (6PD-R)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

6EN-AA

Re: Eco Services Operations LLC Benzene NESHAP, Subpart FF, Quarterly Report
July 1, 2015 to September 30, 2015
EPA ID No.: TXD008099079

Dear Mr. Robinson:

Eco Services Operations LLC in Houston, Texas owns and operates a Sulfuric Acid Regeneration Plant. In addition to the regeneration of sulfuric acid, the plant incinerates hazardous waste, under the conditions of the facility's RCRA Part B Permit (HW-50095).

Eco Services receives benzene waste streams from offsite customers to use as fuel in the Sulfuric Acid Regeneration Unit No. 2 (SARU) industrial furnace which is permitted under 40 CFR 266 Subpart H. Thus, the SARU industrial furnace is a treatment process for the waste and are exempt from testing and monitoring per 40 CFR 61.348(d)(1) and 61.354(a). The benzene waste streams may be stored in one or more of six treatment services (TS) storage tanks prior to treatment. The tanks are vented to the SARU industrial furnace for vapor control per 40 CFR 61.343(a). The TS Vapor Combustor provides backup vapor control for the six TS tanks. The site has no oil-water separators or individual drain systems used to convey benzene waste.

Eco Services submits this quarterly report in accordance with the reporting requirements of 40 CFR 61.357:

- Pursuant to 40 CFR 61.357(d)(6), Eco Services Operations LLC hereby certifies that all required inspections were performed. The required inspections are itemized in Table 1.
- Pursuant to 61.357(d)(7)(iv)(G), there has been no change in the location at which the tank vent stream is introduced into the primary control device flame zone, the SARU industrial furnace.

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012

Mr. Robinson

Page 2

- Pursuant to 40 CFR 61.357(d)(7)(iv)(A), there have been no 3-hour periods during which the average temperature of the gas stream in the combustion zone for the TS Vapor Combustor was <50°F below design temperature when being used as the control device for the TS storage tanks.

Please contact Floyd Dickerson at (713) 924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Director, Health and Human Services Department, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

Table 1

**Eco Services Operations LLC
Houston, Texas
Benzene Waste NESHAP Inspection Requirements
For Quarterly Period Ending: December 31, 2015**

Inspection	Was inspection performed?	Exceptions Noted
Annual Method 21 inspections of tank covers and openings per 61.343(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of tank covers and openings per 61.343(c)	x Yes Except as Noted	
Initial and annual Method 21 inspections of containers per 61.345(a)(1)	x Yes Except as Noted	
Initial and quarterly visual inspections of containers per 61.345(b)	x Yes Except as Noted	
Annual Method 21 inspections of treatment system openings (Regeneration Unit No. 2) per 61.348(e)(3)(ii)	x Yes Except as Noted	
Annual Method 21 inspections of closed vent systems (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of closed vent systems and control devices (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace, including the vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(f)	x Yes Except as Noted	
Daily inspections of control device continuous monitoring data (temperature of TS vapor combustor and "selected parameter" on Regeneration Unit No. 2 industrial furnace) per 61.354(c)	x Yes Except as Noted	

Note: Where annual inspections are listed, they were not necessarily performed during this quarterly reporting period, but have been performed in the last year.



Eco Services Operations LLC
Houston Plant

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US EPA, DALLAS, TX
ASSOCIATE DIRECTOR

16 FEB -4 PM 6:29

COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

Certified Mail; Return Receipt Requested (7015 1520 0003 4945 7883)

January 28, 2016

Mr. Jeff Robinson
Chief, Air Permits Section
6PD-R
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

GEN-AA

Re: HON Semiannual Report per 40 CFR 63.152(c)
TCEQ Identification Nos.: RN100220581/CN604683482

Dear Mr. Robinson:

Eco Services Operations LLC (Eco Services) is an offsite treatment facility for 40 CFR Part 63 Subpart G (HON) Group 1 wastewater streams and residuals. Eco Services submitted a letter on August 6, 1998 certifying that it will manage and treat any HON-regulated Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with the applicable requirements in 40 CFR 63.133 through 63.147. On November 8, 2006, Eco Services submitted the Notification of Compliance Status (NCS) Report per 40 CFR 63.152(b). Per 40 CFR 63.146(c) and 63.152(c), semiannual reports are also required. This submittal includes the semiannual report for the period of July 1 to December 31, 2015.

Specific elements of the semi-annual report are listed below:

63.146(c) - For each tank storing HON Group 1 wastewater or residuals, the results of each inspection in which a control equipment failure (a gasket, joint, lid, cover, or door has a crack or gap, or is broken) was identified. Include the date of the inspection, identification of each waste management unit (tank) in which a control equipment failure was detected, description of the failure, and description of the nature of and date the repair was made.

HON Group 1 wastewater and residuals may be stored in one or more of the six (6) Treatment Services (TS) tanks. There were no control equipment failures identified for these tanks in the reporting period.

63.146(d) - Treatment process monitoring data.

The treatment process is a RCRA unit and is exempt from monitoring per 63.138(h).

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012

63.146(e)(1), Table 20 item (1) - For each tank storing HON Group 1 wastewater or residuals that vents to a thermal incinerator for vapor control, report all daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected.

The TS tanks normally vent to the Regeneration Unit No. 2 (Regen 2) sulfuric acid furnace which is exempt from monitoring per 63.139(d)(4)(iv). In the event that Regen 2 is unavailable, tank vapors are routed to the Treatment Services Vapor Combustor (TSVC). The TSVC minimum combustion temperature is 1,500°F per operating permit. During this reporting period, there were no instances of the daily average TSVC combustion temperature being under 1,500°F while TS tanks were venting to it. There were no days when insufficient monitoring data were collected during this reporting period.

63.146(e)(1), Table 20 item (8)(i) and 63.148(j)(2) - For closed vent systems used to convey HON wastewater tank vapors to a control device, any bypass valves and lines must be equipped with a flow indicator or car-seal. Report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor (flow indicator) is not operating.

The vent stream was not diverted to the atmosphere this reporting period. We do not use flow indicators for this purpose.

63.146(e)(1), Table 20 item (8)(ii) and 63.148(j)(3) - Report the times and durations of any periods when the bypass valves are moved to the diverting position, the seal has been changed, the seal mechanism is broken, or the key to unlock the bypass line valve was checked out.

There were no bypass valve or car-seal abnormalities this reporting period. We do not use lock-and-key mechanisms for this purpose.

Please contact Floyd Dickerson at 713-924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Director, Health and Human Services Department, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

453215 v8



A1/A1/c2

Eco Services LLC
Houston Plant**Certified Mail Return Receipt Requested (7015 1520 0003 4945 7982)**

January 29, 2016

Compliance Assurance and Enforcement Division (6EN)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733RECEIVED
US EPA, DALLAS, TX
ASSOCIATE DIRECTOR
16 FEB -3 PM 2:53
COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.Subject: Eco Services LLC
Houston, Texas Plant
NSPS Kb Semiannual Report – 2nd Half 2015
Permit No. O-03049

To Whom It May Concern:

Per the 40 CFR Part 60 (NSPS) Subpart Kb operating plan for the Houston plant, the following tanks are subject to vapor control, or assumed to be subject to vapor control, per NSPS Subpart Kb.

Tank No.	Description	Contents	Control Device
B-1 B-2	Treatment Services (TS) Tanks	Volatile organic liquids (VOL)	Regeneration Unit No.2 Furnace with TS Vapor Combustor (TSVC) as backup
Tk 48 Tk 49 Tk 53 Tk 56* Tk 78*	Spent Acid (SA) Tanks	Spent sulfuric acid with potential for containing volatile organic liquids	Regeneration Unit No.2 Furnace with Spent Acid Vapor Combustor as backup.

**Available information indicates that tanks 56 and 78 have not been reconstructed or modified since 1984, but are listed for completeness.*

40 CFR 60.7 requires a semiannual report for these tanks.

Eco Services LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012



Eco Services LLC
Houston Plant

Spent Acid Tanks Summary Report

Pollutant	VOC
Reporting period dates:	7/1/2015 to 12/31/2015
Company:	Eco Services LLC Houston site
Emission Limitation:	25.93 lbs/hr when venting to secondary APVC (vapor combustor)
Address:	8615 Manchester Houston, TX 77012
Monitor Manufacturer and Model No:	Not Applicable
Date of Latest CMS Certification or Audit:	Not Applicable
Process Unit Description:	Spent Acid Tank Farm
Total source operating time in reporting period:	4,416 hours
Duration of excess emissions in reporting period due to:	
a. Startup/shutdown	0.0 hours
b. Control equipment problems	0.00 hours
c. Process problems	213.89 hours
d. Other known causes	0.0 hours
e. Unknown causes	0.0 hours
Total duration of excess emission	213.89 hours
Total duration of excess emissions	4.8 %

Eco Services LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012



Eco Services LLC
Houston Plant

TS Tanks Summary Report

Pollutant	VOC
Reporting period dates:	7/1/2015 to 12/31/2015
Company:	Eco Services LLC Houston site
Emission Limitation:	22.22 lbs/hr when venting to TSVC
Address:	8615 Manchester Houston, TX 77012
Monitor Manufacturer and Model No:	Not Applicable
Date of Latest CMS Certification or Audit:	Not Applicable
Process Unit Description:	Treatment Services Tank Farm
Total source operating time in reporting period:	4,416 hours
Duration of excess emissions in reporting period due to:	
f. Startup/shutdown	0 hours
g. Control equipment problems	0 hours
h. Process problems	0.0 hours
i. Other known causes	0.0 hours
j. Unknown causes	0 hours
Total duration of excess emission	0.0 hours
Total duration of excess emissions	0.0 %

If you have any questions concerning this matter, please call David Laurie at (713) 924-1484.

Sincerely,

A handwritten signature in blue ink, appearing to read "William McConnell".

William McConnell
Plant Manager
Solvay USA Inc.

Attachment

Eco Services LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012



Eco Services Operations Corp.
Houston Plant

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ASSOCIATE DIRECTOR

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COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

CERTIFIED MAIL: Return Receipt Requested (7015 3010 0000 3182 3783)

July 14, 2016

Mr. John Blevins
Compliance Assurance and Enforcement Section
Air/Toxics and Inspection Coordination Branch
US EPA Region 6
1445 Ross Avenue (6EN-AT)
Dallas, TX 75202-2733

Re: Eco Services Operations Corp.
Houston, Texas Facility
Notification of Tanks Subject to NSPS Subpart Kb (40 CFR 60.110b)

Dear Mr. Blevins:

Eco Services Operations Corp., formally Eco Services Operations LLC, currently operates Sulfuric Acid Regeneration Unit No. 2 (Regen 2) (TCEQ Air Permit No. 4802) at its Houston facility. Regen 2 receives spent sulfuric acid via truck, barge and rail for recycling in its industrial furnace. Regen 2 is also permitted as a RCRA Boiler and Industrial Furnace (TCEQ Permit No. HW-50095-001) to manage liquid hazardous waste materials. The spent sulfuric acids and liquid hazardous wastes can either be direct-burned or placed in storage tanks prior to being burned. Spent sulfuric acid often contains volatile organic liquids (VOL). The liquid hazardous wastes routinely contain VOL.

Eco Services has revised the operating plan to update the change in ownership of the Houston plant. Eco Services is submitting this operating plan for agency approval. This operating plan covers all onsite tanks subject to NSPS Subpart Kb.

If you should have any questions, please contact David Laurie at (713) 924-1484.

Sincerely,

W. F. Dickerson
Environmental Manager

Attachment

Eco Services Operations Corp.
Houston Plant
8615 Manchester Street
Houston, TX 77012

cc:

Mr. Richard A. Hyde, P.E.
Executive Director, MC-109
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Air Section Manager
Texas Commission on Environmental Quality
Region 12
5425 Polk Avenue, Suite H
Houston, TX 77023-1486

Eco Services Operations Corp.
Houston Plant
8615 Manchester Street
Houston, TX 77012

NSPS Subpart Kb Operating Plan per 40 CFR 60.113b(c)(1)
Eco Services Operations Corp. Houston, Texas Plant
Revision 9

Eco Services is modifying the Operating Plan to comply with the NSPS Subpart Kb requirements as they apply to hazardous waste and spent sulfuric acid storage tanks at the Houston Plant. Submittal of an Operating Plan is required by 40 CFR 60.113b(c)(1).

The Houston plant has the following tanks that are subject to vapor control per 40 CFR 60.112b. These tanks use a closed vent system and control devices as the method of compliance per 40 CFR 60.112b(3).

Tank	Unit	Contents	Control Device
B1	Treatment Services	VOL	Regen 2 Furnace with a Vapor Combustor as Backup
B2	Treatment Services	VOL	Regen 2 Furnace with a Vapor Combustor as Backup

In addition, the following tanks have the potential to contain material that is subject to vapor control per 40 CFR 60.112b. These tanks use a closed vent system and control device as the method of compliance per 40 CFR 60.112b(3).

Tank	Unit	Contents	Control Device
48	Sulfuric Acid Manufacturing	VOL	Regen 2 Furnace with a Vapor Combustor as Backup
49	Sulfuric Acid Manufacturing	VOL	Regen 2 Furnace with a Vapor Combustor as Backup
53	Sulfuric Acid Manufacturing	VOL	Regen 2 Furnace with a Vapor Combustor as Backup
56*	Sulfuric Acid Manufacturing	VOL	Regen 2 Furnace with a Vapor Combustor as Backup
78*	Sulfuric Acid Manufacturing	VOL	Regen 2 Furnace with a Vapor Combustor as Backup

* These tanks have not been reconstructed or modified since 1984, but are listed for completeness.

This plan must document that the tank vent control system will achieve the required 95% control efficiency.

NSPS Subpart Kb Operating Plan per 40 CFR 60.113b(c)(1)
Eco Services Operations Corp. Houston, Texas Plant
Revision 9

Eco Services is modifying the Operating Plan to comply with the NSPS Subpart Kb requirements as they apply to hazardous waste and spent sulfuric acid storage tanks at the Houston Plant. Submittal of an Operating Plan is required by 40 CFR 60.113b(c)(1).

The Houston plant has the following tanks that are subject to vapor control per 40 CFR 60.112b. These tanks use a closed vent system and control devices as the method of compliance per 40 CFR 60.112b(3).

Tank	Unit	Contents	Control Device
B1	Treatment Services	VOL	Regen 2 Furnace with a Vapor Combustor as Backup
B2	Treatment Services	VOL	Regen 2 Furnace with a Vapor Combustor as Backup

In addition, the following tanks have the potential to contain material that is subject to vapor control per 40 CFR 60.112b. These tanks use a closed vent system and control device as the method of compliance per 40 CFR 60.112b(3).

Tank	Unit	Contents	Control Device
48	Sulfuric Acid Manufacturing	VOL	Regen 2 Furnace with a Vapor Combustor as Backup
49	Sulfuric Acid Manufacturing	VOL	Regen 2 Furnace with a Vapor Combustor as Backup
53	Sulfuric Acid Manufacturing	VOL	Regen 2 Furnace with a Vapor Combustor as Backup
56*	Sulfuric Acid Manufacturing	VOL	Regen 2 Furnace with a Vapor Combustor as Backup
78*	Sulfuric Acid Manufacturing	VOL	Regen 2 Furnace with a Vapor Combustor as Backup

* These tanks have not been reconstructed or modified since 1984, but are listed for completeness.

This plan must document that the tank vent control system will achieve the required 95% control efficiency.

Tanks B1 and B2

Tanks B1 and B2 are fixed roof tanks vented through a closed vent manifold system to either the Regeneration Unit No. 2 (Regen 2) industrial furnace or to the Treatment Services vapor combustor (TSVC). Regen 2 is the primary control system and the TSVC serves as an emergency backup control device. Both of these control systems achieve VOC control efficiencies in excess of 95%, as described below.

(1) Regeneration Unit No. 2 (EPN 104)

The Regen 2 industrial furnace provides temperatures in excess of 816°C and destruction of VOCs in excess of 99.99% as demonstrated in the trial burn for the Regen 2 RCRA Boiler and Industrial Furnace (BIF) permit. Section 60.113b(c)(i) of Subpart Kb allows the documentation of the existence of these conditions to be sufficient for the control system to meet the VOC destruction requirement. Attachment 1 contains a summary table of the trial burn results for Regen 2.

Eco Services monitors temperatures in the Regen 2 industrial furnace and will ensure that the average hourly furnace temperatures remains above 815°C (1,500°F) whenever Tanks B1 and B2 are vented to Regen 2. The temperature in the Regen 2 industrial furnace is maintained between 1,800°F to 2,100°F. The design of the Regen 2 industrial furnace is such that residence times in excess of 0.75 seconds are always maintained. The residence time in the Regen 2 industrial furnace is 2 to 4 seconds.

(2) Treatment Services Vapor Combustor (EPN 120)

- The residence time for the Treatment Services vapor combustor is as follows:

Stack Diameter (inner diameter) = 6 feet
Combustion Zone = 28 feet

$$\text{Residence Time} = \frac{\text{Stack Volume}}{\text{Gas Flow (acfm)}} = \frac{\pi (3)^2 (28)}{25,450}$$

$$= 0.0311 \text{ minutes} = 1.86 \text{ seconds}$$

- The minimum temperature for the Treatment Services vapor combustor is as follows:

Eco Services utilizes a log sheet when the vapor combustor is in service when the Regen 2 industrial furnace is not operational. A copy can be found in Attachment 2. The temperature is tracked on the Distributed Control System and all data is maintained for five (5) years.

Tanks 48, 49, 53, 56, and 78

Tanks 48, 49, 53, 56, and 78 are fixed roof tanks vented through a closed vent manifold system to either the Regen 2 industrial furnace or to the spent acid vapor combustor (SAVC). Regen 2 is the primary control system and the SAVC serves as an emergency backup control device. Both of these control systems achieve VOC control efficiencies in excess of 95%, as described below.

(1) Regeneration Unit No. 2 (EPN 104)

The Regen 2 industrial furnace is the primary control for the spent acid tank farm vents and provides temperatures in excess of 816°C and destruction of VOCs in excess of 99.99% as demonstrated in the trial burn for the Regen 2 RCRA Boiler and Industrial Furnace (BIF) permit. Section 60.113b(c)(i) of Subpart Kb allows the documentation of the existence of these conditions to be sufficient for the control system to meet the VOC destruction requirement. Trial burn results for Regen 2 can be found in Attachment 1.

Eco Services monitors temperatures in the Regen 2 industrial furnace and will ensure that the average hourly furnace temperatures remains above 815°C (1,500°F) whenever Tanks 48, 49, 56 and 78 are vented to Regen 2. The temperature in the Regen 2 industrial furnace is maintained between 1,800°F to 2,100°F. The design of the Regen 2 industrial furnace is such that residence times in excess of 0.75 seconds are always maintained. The residence time in the Regen 2 industrial furnace is 2 to 4 seconds.

(2) Spent Acid Vapor Combustor (EPN 170)

The Spent Acid Vapor Combustor (SAVC) operates in series after a caustic scrubber that removes SO₂ from the tank vent system. The caustic scrubber and SAVC are the backup control scheme for the spent acid tank farm vent. When Regen 2 furnace is down, the tank vent system is diverted to the scrubber/combustor. The vapor combustor was designed by the manufacturer to achieve as least 95% DRE at 815°C (1,500°F).

A compliance test was conducted at maximum organic loading to the SAVC. The results from this test demonstrate compliance with 60.113b(c)(1)(i) requirements of 95% destruction of volatile organic compounds when the destruction demonstrated exceeded 95%. A copy of the compliance test report can be found in Attachment 3.

Based on the test results and design, the SAVC achieves $\geq 95\%$ DRE at 1522°F. Following the precedent in 40 CFR Part 63 Subpart G (HON), compliance will be determined on a daily average basis. Firebox temperature in the SAVC will be continuously monitored. If the daily average firebox temperature (including only temperature data obtained when the valve to the SAVC is open) is at least 1522°F, then compliance is achieved. If this daily average temperature is less than 1522°F, we will calculate the daily average DRE for the SAVC and Regen 2 furnace in aggregate (a time-weighted average). Compliance is achieved if the daily average DRE is at least 95%.

Thus, we have two options to demonstrate compliance:

1. SAVC daily average temperature (including only temperature data obtained when the valve to the vapor combustor is open) greater than or equal to 1522°F.
2. Calculated daily average DRE (considering SAVC and Regen furnace in aggregate) greater than or equal to 95%.

Two options for compliance are specified because option 2 requires a manual calculation to be performed. We prefer to avoid this manual calculation where possible. Option 1 provides a “screening” indication of compliance that can be calculated automatically by the process control computer. If compliance is demonstrated via option 1, it is not necessary to perform the calculation in option 2.

The following theoretical example shows how compliance could be demonstrated using option 2 if option 1 was unable to demonstrate compliance:

12:00 am to 11:00 pm - routed to Regen 2 furnace

11:00 pm to 11:30 pm - routed to SAVC, temperature between 1424-1512°F *

11:30 pm to 12:00 am - routed to SAVC, temperature between 1522-1536°F

daily average temperature of vapor combustor = 1501°F

(as calculated by process control computer)

daily average DRE =

$$\frac{(1380 \text{ min}) * (99.9999) + (30 \text{ min}) * (90.8) + (30 \text{ min}) * (99.6)}{1440 \text{ minutes}} = 99.8\%$$

* Destruction and Removal Efficiency conducted on Eco Services Baton Rouge, Louisiana facility's similar vapor combustor installation. Test results can be found in Attachment 4

Attachment 1

RCRA Trial Burn Test Results Demonstrating Regeneration Unit No. 2 DRE

**RCRA TRIAL BURN REPORT
RHODIA INC.
SULFURIC ACID REGENERATION UNIT NO. 2
HOUSTON, TEXAS**

**TCEQ SOLID WASTE IDENTIFICATION NO.: 31019
TCEQ PERMIT NO.: HW-50095-001
U.S.E.P.A. ID NO.: TXD008099079**

Prepared for:
RHODIA INC.
8615 Manchester Street
Houston, Texas 77012

Prepared by:
WESTON SOLUTIONS, INC.
1400 Weston Way
P.O. Box 2653
West Chester, Pennsylvania 19380

January 2011

W. O. No. 12143.075.003

Table 2-4

Summary of Emissions Test Results – Mode B

Parameter	Test Results				RCRA Permit Limit
	Run 1	Run 2	Run 3	Average	
Particulate Matter (PM)	0.00093	0.00098	0.00079	0.00090	0.08 gr/dscf @ 7% O ₂
Hydrogen Chloride (HCl)	0.013	0.014	0.024	0.017	0.103 g/sec
Chlorine (Cl ₂)	<0.0014	<0.0017	<0.0013	<0.0015	0.093 g/sec
Carbon Monoxide (CO) ¹	29.4	26.3	31.4	29.0	100 ppm @ 7% O ₂ (1 hour rolling average)
Destruction Efficiency					
MCB, %	> 99.99972	> 99.99972	> 99.99972	> 99.99972	99.99%
TCE, %	> 99.99995	> 99.99995	> 99.99995	> 99.99995	99.99%
Volatile Organics	---	---	---	---	See Section 6 for detailed test results
Semivolatile Organics	---	---	---	---	
Chlorinated Dioxins and Furans ²	2.39E-13	9.63E-13	4.36E-11	1.49E-11	
Nitrogen Oxides as NO ₂ , lb/hr ¹	6.60	5.48	5.07	5.72	
Total Hydrocarbon as propane, lb/hr ¹	0.099	0.099	0.099	0.099	

- 1 Carbon monoxide (CO), nitrogen oxides (NO_x) and total hydrocarbon (THC) individual test run averages from temporary CEM system used during the trial burn. CO results are corrected to 7% O₂.
- 2 Maximum TEQ emission rate.

Table 3-2

Summary of Process Operating Conditions During the Trial Burn – Mode A

Parameter	Current Limit	Mode A			Proposed Limit ^{2,3}
		Run 1	Run 2	Run 3	
Hazardous Waste Feed Rate, lbs/min	464.81	333.90	341.42	340.39	338.57
Total Spike Stream Feed Rate, lbs/min	NA	12.79	12.80	12.79	12.79
Bucket/Bag Feed Rate, per hour ⁽¹⁾	20	0	0	0	0
Minimum Main Gas Blower SO ₂ , %	5.5	8.36	8.26	9.03	8.55
Sulfuric Acid Production, ton/hr	38.28	28.52	27.93	28.00	28.15
Combustion Chamber Temperature, °F (max)	2,127	2150.94	2142.88	2146.29	2146.70
Combustion Gas Velocity, ACFM (existing)	186,137	167,907	165,720	165,435	166,354
Combustion Gas Velocity, ACFM (proposed)	186,137	172,897	170,429	170,178	171,168
Hourly Rolling Average for CO, (ppmv)	100	2.72	4.69	2.14	3.18
Combustion Chamber Pressure, H ₂ O	0.0	-1.41	-1.35	-1.37	-1.38
ESP Inlet Temperature, °F	120	90.09	86.07	89.33	88.50
Pressure Drop Across Demister, in H ₂ O	3	16.47	16.19	16.31	16.32
Total Power to ESP, KV	ESP1	67.77	67.85	68.22	67.95
	ESP2	66.36	66.01	65.94	66.10
					50

- (1) Buckets/Bags were not fed during the Trial Burn.
 (2) Proposed limits are based upon averages of Mode A and/or Mode B values where applicable.
 (3) Proposed hazardous waste feed rate limit includes all waste feeds and spike streams.

Table 3-3

Summary of Process Operating Conditions during the Trial Burn – Mode B

Parameter	Current Limit	Mode B				Proposed Limit ^{2,3}
		Run 1	Run 2	Run 3	Average	
Hazardous Waste Feed Rate, lbs/min	464.81	269.96	258.69	262.15	263.60	313.26
Total Spike Stream Feed Rate, lb/min	NA	11.55	11.55	11.55	11.55	
Bucket/Bag Feed Rate, per hour ⁽¹⁾	20	0	0	0	0	20
Minimum Main Gas Blower SO ₂ , %	5.5	8.41	9.56	8.42	8.80	5.5
Sulfuric Acid Production, ton/hr	38.28	29.34	30.53	30.36	30.08	38.28
Combustion Chamber Temperature, °F (min)	1884	1889.39	1869.13	1864.44	1874.32	1874.32
Combustion Gas Velocity, ACFM (existing)	186,137	144,309	135,561	133,579	137,816	
Combustion Gas Velocity, ACFM (proposed)	186,137	148,269	139,241	137,446	141,652	171,168
Hourly Rolling Average for CO, (ppmv)	100	65.24	56.22	53.39	58.28	100
Combustion Chamber Pressure, H ₂ O	0.0	-1.79	-1.14	-1.23	-1.39	0.0
ESP Inlet Temperature, °F	120	91.76	94.29	94.10	93.38	120
Pressure Drop Across Demister, in H ₂ O	3	14.98	14.82	14.88	14.89	3
Total Power to ESP, KV	ESP1	69.14	69.68	69.55	69.46	50
	ESP2	70.82	73.10	71.70	71.87	50

- (1) Buckets/Bags were not fed during the Trial Burn.
 (2) Proposed limits are based upon averages of Mode A and/or Mode B values where applicable.
 (3) Proposed hazardous waste feed rate limit includes all waste feeds and spike streams.

**ECO SERVICES
HOUSTON PLANT
FLARE LOG SHEET**

Citation: 40 CFR 264.1035(c)(8)

1. TIME REGEN 2 SHUT DOWN: _____

Citation: 40 CFR 264.1035(c)(8)

2. TIME FLARE STARTED: _____

Citation: 40 CFR 264.1035(c)(5)

3. WAS THERE A FLAME FAILURE?

a. _____	YES	_____	NO	_____	TIME	_____	DURATION
b. _____	YES	_____	NO	_____	TIME	_____	DURATION
c. _____	YES	_____	NO	_____	TIME	_____	DURATION
d. _____	YES	_____	NO	_____	TIME	_____	DURATION

4. IF YES, WHAT WAS CAUSE OF FLAME FAILURE?

a. _____
b. _____
c. _____
d. _____

Citation: 40 CFR 264.1035(c)(4)(i)

5. DID FLAME TEMPERATURE EVER GO BELOW 1400 F(760 C)?__YES__NO

Citation: 40 CFR 264.1035(c)(8)

6. TIME ABLE TO VENT TO REGEN FURNACE:

Citation: 40 CFR 264.1035(c)(8)

7. TIME FLARE SHUT DOWN:

DATE: _____ WAS FLARE IN SERVICE?:
BY: _____ YES: _____ NO: _____
TIME: _____

DATE: _____ WAS FLARE IN SERVICE?:
BY: _____ YES: _____ NO: _____
TIME: _____

Attachment 2

Contained Vapor Combustor EPN 120 Log Sheet

Attachment 3

Contained Vapor Combustor EPN 170 Compliance Test Results

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SECTION 1.0 SUMMARY

Entech Engineering Inc. was retained by Rhodia Inc. to conduct an initial determination of compliance test of the Sulfuric Acid Regeneration Unit 2, Vapor Combustor 2 in Houston, Harris County, Texas. The primary objective of this program is to demonstrate performance of the Vapor Combustor 2 in controlling volatile organic compound (VOC) emissions according to the Texas Commission on Environmental Quality (TCEQ) Standard Permit No. 4802. The secondary objective of the program is to demonstrate initial compliance of the Vapor Combustor 2 in controlling Highly Reactive Volatile Organic Compound (HRVOC) emissions per the TCEQ Regulation V (30 TAC Chapter 115), Subchapter H. The emission performance test program was conducted on February 15 and 16, 2006 and coordinated by Mr. Floyd Dickerson and Mr. Craig Jongsma of Rhodia Inc. The TCEQ Region 12 (Houston) office was notified of the test program and Mr. Thomas Bill and Mr. Joseph Doby of that office were present during testing.

The Vapor Combustor 2 at the Rhodia Inc., Houston plant is an enclosed flare, manufactured by John Zink Company of Tulsa, Oklahoma, to control VOC's during normal tank breathing and railcar depressurizing. The vapor combustor 2 is designated in the permit as emission point number (EPN) 170. Pipeline-quality sweet natural gas is used as supplemental fuel. According to the permit, Vapor Combustor 2 has to conduct stack testing to demonstrate VOC emissions compliance (Special Condition 14). Testing occurred at the inlet of the vapor combustor to determine destruction and removal efficiency (DRE).

The compliance test was conducted during maximum production (loading) rates, which is identified as the combination of the maximum conditions as identified in the MAER as Vapor Combustor 2 - Normal plus Vapor Combustor 2 - Standby (maintenance). Those conditions included an outage on Regeneration Unit Number 2 Furnace (EPN 104), barge unloading of spent sulfuric acid into Tank 78 at a rate of 800 gallons per minute, working volume from spent sulfuric acid Tanks 48, 49 and 56, depressurization of six spent sulfuric acid railcars and depressurization of a spent sulfuric acid truck.

The vapor combustor 2 inlet offgas vent line is a 16-inch internal diameter vertical pipe. The upstream and downstream distances from the sampling plane meet the minimum unobstructed requirements of reference method 1. After destroying the emissions in the vapor combustor, the flue gas is vented to the atmosphere via 8-foot nominal internal diameter (ID) stack. The emission point for vapor combustor is located approximately 35 feet above grade.

According to the TCEQ Region 12 (Houston) office, the vapor combustor must demonstrate compliance with Standard Permit 4802 and the permit representation of 98 % destruction and removal efficiency (DRE). This program also determined compliance on highly-reactive volatile organic compound (HRVOC) emissions and determined HRVOC DRE based on ethylene mass emission rates. The initial compliance test comprised of inlet and outlet (stack) sampling for VOC

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and HRVOC testing by Reference Method (RM) 18. The vapor combustor inlet vent line velocity was measured by RM 2. Moisture at the inlet was determined based on the psychrometric condition of the gases.

Due to Rhodia Inc.'s safety guidelines preventing personnel from accessing the vapor combustor stack during operation, Entech personnel used the combined inlet flue gas composition (i.e., vent gas and natural gas) to determine the EPA stoichiometric Fd factor per the Reference Method (RM) 19 (40CFR60 Appendix A) and using the inlet (i.e., vent gas and natural gas) heat rates to determine the stack flue gas flow rates. The calculated stack flue gas flow rates were then used with measured stack concentrations to determine stack mass emission rates.

The mass emission rates at the inlet and stack were used to determine the DRE of the unit. The arithmetic average of the three runs was used to determine emission compliance test results at the maximum achievable operating condition. Process operational data were recorded by plant personnel to correlate the unit operating conditions to emission parameters.

A summary of the emission compliance test results in comparison to the regulatory requirements and permit specifications for the Vapor Combustor 2, EPN 170 are presented in Table 1. Test methods and equipment descriptions are presented in Section 2.0 and results and discussions are presented in Section 3.0.

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SECTION 3.0 RESULTS AND DISCUSSIONS

Entech Engineering conducted an initial determination of compliance test of the Sulfuric Acid Regeneration Unit 2, Vapor Combustor 2, EPN 170 at Rhodia Inc., Houston plant in Houston, Harris County, Texas. Sampling equipment was set up on February 14, 2006. Testing occurred on February 15 and 16, 2006.

For the emission tests, three 64-minute tests were conducted on one Vapor Combustor 2 to measure inlet vent line, natural gas fuel line and stack VOC and HRVOC emissions while operating at the maximum achievable rate. Inlet pollutant and miscellaneous gas compositions along with flow rates were used to calculate by RM 19 the stack flow rate. The inlet and stack mass emission rates were used to calculate destruction and removal efficiency of the unit. Summaries of the emission compliance test results are presented in Tables 2 through 6. At the stack no VOC concentrations were measured by the gas chromatograph except propane in Test ID 1, therefore the method detection limit for all other VOC and HRVOC species analyzed for is used to represent the stack emission concentration and mass emission.

Other pertinent data of the test program is contained in the appendices. The field raw data is contained in Appendix A. Laboratory data and data calculations are presented in Appendices B and C. Instrument specifications, equipment calibrations, process data, resumes, chain of custody, and personnel information are presented in Appendices D through J.

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Table 2.
Rhodia Inc., Houston, Texas
Vapor Combustor 2 (EPN 170)
VOC Emission Performance Test Summary
Houston, Harris County, Texas

Test ID	1	2	3	Average
Date	02/15/06	02/16/06	02/16/06	
Time	11:15 - 12:19	10:05 - 11:10	14:40 - 15:41	

VOC Emission Data

Inlet Waste Gas Line	(lb/hr)	12.891	5.714	4.401	7.669
Fuel Gas Line	(lb/hr)	12.518	12.611	11.909	12.346
Combined Inlet Waste Gas and Fuel Gas Line VOC's	(lb/hr)	25.409	18.325	16.310	20.014
Stack VOC	(lb/hr)	0.067	0.063	0.066	0.065
VOC DRE	(%)	99.74%	99.66%	99.59%	99.7%

HRVOC Emission Data *

Inlet Waste Gas Line Ethylene	(lb/hr)	0.0724	0.2495	0.2124	0.1781
Stack Ethylene	(lb/hr)	0.0024	0.0023	0.0024	0.0024
HRVOC DRE	(%)	96.64%	99.07%	98.85%	98.2%

Stack HRVOC**	(lb/hr)	0.0253	0.0241	0.0255	0.0249
---------------	---------	--------	--------	--------	--------

*Note: Ethylene was the only HRVOC measured by the Gas Chromatograph at the inlet. The gas chromatograph analysis at the stack resulted in no measurable HRVOC, therefore the method detection limit (MDL) for ethylene is used at the stack. The HRVOC DRE (destruction and removal efficiency) was determined based on ethylene mass emission rates.

**Note: The gas chromatograph analysis at the stack resulted in no measurable HRVOC, therefore the method detection limit (MDL) for all HRVOC's is used at the stack.

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Table 3.
Rhodia Inc., Houston, Texas
Vapor Combustor 2 (EPN 170)
VOC Emission Performance Test Summary
Houston, Harris County, Texas

Test ID	1	2	3
Date	02/15/06	02/16/06	02/16/06
Time	11:15 - 12:19	10:05 - 11:10	14:40 - 15:41

Inlet Waste Vent Line Parameters

Inlet Waste Gas Flow Rate	(SCFM)	871.99	1241.67	853.25
	(SCM/hr)	1481.69	2109.85	1449.84
Inlet Waste Gas HHV	(Btu/SCF)	5.37	1.68	1.93
	(Btu/lb)	73.00	23.00	26.00

Combined Inlet Waste Vent Gas Line and Fuel Gas Line Parameters

Fuel Gas Flow Rate	(SCFM)	199.15	210.07	193.73
Fuel Gas HHV	(Btu/SCF)	997.81	995.51	995.51
	(Btu/lb)	21919	21902	21902
Fuel Gas Heat Input	(MMBtu/hr)	11.92	12.55	11.57
Inlet Waste Gas Heat Input	(MMBtu/hr)	0.28	0.13	0.10
Total Heat Input	(MMBtu/hr)	12.20	12.67	11.67
Fd Factor	(DSCF/MMBtu)	12273.14	13497.09	12434.92

Stack Parameters

Flue Gas Flow Rate*	(DSCFM)	6248.26	5952.04	6287.47
Oxygen Content	(%)	12.55	10.89	12.86
Carbon Dioxide Content	(%)	3.50	4.25	3.51

* The flue gas flow rates were determined by Reference Method 19 Fd factor.

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Table 4.
Rhodia Inc., Houston, Texas
Vapor Combustor 2 (EPN 170)
Stack Performance Test Summary
Houston, Harris County, Texas

Test ID	1	2	3
Date	02/15/06	02/16/06	02/16/06
Time	11:15 - 12:19	10:05 - 11:10	14:40 - 15:41

Stack Gas Parameters

Stack Flow Rate	(SCFM)	6248.26	5952.04	6287.47
	(SCM/hr)	10617.04	10113.70	10683.66
Stack Mol. Wt.	lb/mole	25.870	26.260	25.760
Oxygen Content	(%)	12.55	10.09	12.86
Carbon Dioxide Content	(%)	3.50	4.25	3.51
Nitrogen Content	(%)	82.21	83.92	81.88
Moisture Content	(%)	1.74	1.74	1.74

Stack Volatile Organic Compounds (VOC) Gas Data

Component Name	Molecular Formula	Concentration** ppmv	Mass Rate lb/hr	Concentration** ppmv	Mass Rate lb/hr	Concentration** ppmv	Mass Rate lb/hr
Methane	16.04	0.2770	0.0043	0.0000	0.0000	0.0000	0.0000
Ethane	30.07	0.1300	0.0038	0.1710	0.0048	0.4200	0.0124
Ethylene	28.05	0.0890	0.0024	0.0890	0.0023	0.0890	0.0024
Propane	44.09	0.1110	0.0048	0.0880	0.0036	0.0880	0.0038
Propylene	42.08	0.0870	0.0036	0.0870	0.0034	0.0870	0.0036
Isobutane	58.12	0.0710	0.0040	0.0710	0.0038	0.0710	0.0040
n-Butane	58.12	0.0880	0.0050	0.0880	0.0047	0.0880	0.0050
cis 2-Butene	56.10	0.0503	0.0027	0.0500	0.0026	0.0500	0.0027
1-Butene	56.10	0.0903	0.0049	0.0900	0.0047	0.0900	0.0049
Isobutylene	56.10	0.0910	0.0050	0.0910	0.0047	0.0910	0.0050
trans 2-Butene	56.10	0.0320	0.0017	0.0320	0.0017	0.0320	0.0018
n-Pentane	72.15	0.0940	0.0056	0.0940	0.0063	0.0940	0.0066
1,3-Butadiene	54.09	0.0940	0.0049	0.0940	0.0047	0.0940	0.0050
1-Pentene	70.13	0.0860	0.0059	0.0860	0.0056	0.0860	0.0059
n-Hexane	86.17	0.1000	0.0084	0.1000	0.0080	0.1000	0.0084
1-Hexene	84.16	0.0830	0.0068	0.0830	0.0065	0.0830	0.0068
Total VOC Stack ***		1.1660	0.0667	1.1430	0.0626	1.1430	0.0661
Total HRVOC Stack *		0.5330	0.0253	0.5330	0.0241	0.5330	0.0255

* Note: Total HRVOC includes ethylene, propylene, cis 2-butene, trans 2-butene, 1-butene, isobutylene, and 1,3-butadiene.

** Note: No VOC concentrations were measured by the gas chromatograph except propane in Test ID 1, therefore all other VOC concentrations are presented as Method Detection Limit (MDL) in parts-per-million by volume.

*** Note: Total VOC does not include Methane and Ethane.

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Table 5.
Rhodia Inc., Houston, Texas
Vapor Combustor 2 (EPN 170)
Inlet Waste Vent Line Performance Test Summary
Houston, Harris County, Texas

Test ID	1	2	3
Date	02/15/06	02/16/06	02/16/06
Time	11:15 - 12:19	10:05 - 11:10	14:40 - 15:41

Inlet Waste Vent Line Parameters

Duct Temperature	(deg. F)	84.06	82.56	87.06
Vent Gas Velocity	(ft/sec)	10.60	15.05	10.47
Vent Gas Flow Rate	(SCFM)	871.99	1241.67	853.25
	(SCM/hr)	1481.69	2109.85	1449.84
Vent Mol. Wt.	lb/mole	27.847	27.803	27.710
Oxygen Content	(% dry)	3.10	3.54	2.65
Carbon Dioxide Content	(% dry)	0.30	0.00	0.00
Nitrogen Content	(% dry)	92.53	92.69	92.98
Moisture Content	(%)	3.90	3.71	4.30

Inlet Waste Vent Line Volatile Organic Compounds (VOC) Gas Data

Component Name	Molecular Formula	Volume % wet	Mass Rate lb/hr	Volume % wet	Mass Rate lb/hr	Volume % wet	Mass Rate lb/hr
Methane	16.04	0.0003%	0.007	0.0003%	0.009	0.0003%	0.006
Ethane	30.07	0.0001%	0.004	0.0001%	0.006	0.0001%	0.004
Ethylene	28.05	0.0019%	0.072	0.0046%	0.249	0.0057%	0.212
Propane	44.09	0.0518%	3.101	0.0222%	1.893	0.0217%	1.271
Propylene	42.08	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
Isobutane	58.12	0.0267%	2.107	0.0038%	0.427	0.0047%	0.363
n-Butane	58.12	0.0921%	7.268	0.0271%	3.045	0.0320%	2.471
cis 2-Butene	56.10	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
1-Butene	56.10	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
Isobutylene	56.10	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
trans 2-Butene	56.10	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
n-Pentane	72.15	0.0002%	0.020	0.0001%	0.014	0.0001%	0.010
1,3-Butadiene	54.09	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
1-Pentene	70.13	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
n-Hexane	86.17	0.0001%	0.012	0.0000%	0.000	0.0000%	0.000
1-Hexene	84.16	0.0001%	0.011	0.0000%	0.000	0.0000%	0.000
Unknown as C3*	44.09	0.0050%	0.299	0.0010%	0.085	0.0012%	0.070
Total VOC Vent Gas *	lb/hr		12.891		5.714		4.401

* Note: Total VOC does not include methane and ethane.

** Note: All unspecified VOC's are presented as propane equivalent.

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Table 6.
Rhodia Inc., Houston, Texas
Vapor Combustor 2 (EPN 170)
Fuel Gas Line Performance Test Summary
Houston, Harris County, Texas

Test ID	1	2	3
Date	02/15/06	02/16/06	02/16/06
Time	11:15 - 12:19	10:05 - 11:10	14:40 - 15:41

Fuel Gas Line Parameters

Vent Gas Flow Rate	(SCFM)	199.15	210.07	193.73
	(SCM/hr)	338.40	356.95	329.19
Vent Mol. Wt.	lb/mole	17.220	17.200	17.200
Oxygen Content	(% dry)	0.14	0.21	0.18
Carbon Dioxide Content	(% dry)	1.65	1.51	1.58
Nitrogen Content	(% dry)	0.89	1.06	0.97
Moisture Content	(%)	1.74	1.74	1.74

Fuel Gas Line Volatile Organic Compounds (VOC) Gas Data

Component Name	Molecular Formula	Volume % wet	Mass Rate lb/hr	Volume % wet	Mass Rate lb/hr	Volume % wet	Mass Rate lb/hr
Methane	16.04	92.8420%	461.851	92.8260%	487.084	92.8340%	449.250
Ethane	30.07	1.9800%	18.462	1.9200%	18.883	1.9500%	17.687
Ethylene	28.05	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
Propane	44.09	0.4480%	6.126	0.4200%	6.058	0.4340%	5.773
Propylene	42.08	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
Isobutane	58.12	0.1060%	1.910	0.1030%	1.958	0.1050%	1.841
n-Butane	58.12	0.0980%	1.766	0.0950%	1.806	0.0970%	1.701
cis 2-Butene	56.10	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
1-Butene	56.10	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
Isobutylene	56.10	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
trans 2-Butene	56.10	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
n-Pentane	72.15	0.0270%	0.604	0.0270%	0.637	0.0270%	0.588
1,3-Butadiene	54.09	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
Isopentane	72.15	0.0490%	1.096	0.0470%	1.109	0.0480%	1.045
n-Hexane	86.17	0.0170%	0.454	0.0160%	0.451	0.0160%	0.416
1-Hexene	84.16	0.0000%	0.000	0.0000%	0.000	0.0000%	0.000
Unknown as C6	86.17	0.0210%	0.561	0.0210%	0.592	0.0210%	0.546
	lb/hr		12.518		12.611		11.909

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Table 7.

Rhodia Inc., Houston, Texas
Vapor Combustor 2 (EPN 170)
Process Data Summary
Houston, Harris County, Texas

Test ID	1	2	3
Date	02/15/06	02/16/06	02/16/06
Time	11:15 - 12:19	10:05 - 11:10	14:40 - 15:41
Stack Temperature (F)	1522.0	1528.8	1536.2
Natural Gas Flow (SCFM)	199.2	210.1	193.7
Venturi Scrubber (pH)	13.1	12.4	12.4
Packet Column Scrubber (pH)	10.6	10.7	12.1
Pressure Scrubber Venturi Inlet (in WC)	-0.6	-0.4	-0.4
Pressure Scrubber Column Inlet (in WC)	4.3	5.1	5.1
Pressure Vapor Combustor inlet (in WC)	1.5	2.0	1.5

Note: Data presented is average of at least four 15 minute readings. Raw process data is presented in Appendix E.

Attachment 4

Baton Rouge Contained Vapor Combustor Compliance Test Results

VOLATILE ORGANIC CARBON
DESTRUCTION REMOVAL EFFICIENCY
OF
COMBUSTOR

CONDUCTED ON
SEPTEMBER 23, 2003

Prepared for

RHODIA, INC.

1275 Airline Highway
Baton Rouge, Louisiana 70807

Prepared by

SETCO

SCHWARTZ ENVIRONMENTAL TESTING COMPANY, INC.

P.O. Box 1667
Prairieville, Louisiana 70769

Project Number 03-107

1.0 INTRODUCTION

Setco conducted emission testing of the acid plant vapor combustor (combustor) for Rhodia, Inc. (Rhodia) at the manufacturing facility located in Baton Rouge, East Baton Rouge Parish, Louisiana. The test was conducted to determine Volatile Organic Carbon (VOC) destruction removal efficiency between the inlet and exhaust stack. Additionally, the exhaust gas stream was measured for sulfur dioxide (SO_2), oxides of nitrogen (NO_x), and carbon monoxide (CO) emission rates. The combustor is identified as Point I.D. Number 27 in the Authorization to Construct issued October 28, 2002.

The test series of the combustor unit was conducted by Setco in accordance with EPA Reference Methods outlined in New Source Performance Standards (NSPS) of Appendix A, Title 40, Part 60 of the Code of Federal Regulations (40 CFR 60). VOC emission samples from the inlet vent and exhaust stack were collected by EPA Reference Method 18. Measurement and determination of flow rate parameters from the inlet vent and exhaust stack were conducted by EPA Reference Methods 1-4. O_2/CO_2 , SO_2 , NO_x , and CO were measured with continuous emission monitors by EPA Reference Methods 3A/3A, 6C, 7E, and 10, respectively.

The emission testing series was conducted by Scott Neumann, Anthony Glass, Keith Delk, and Miles Holley of Setco. Test coordination was managed by John Richardson of Rhodia. The test series was not witnessed by a LDEQ representative, although LDEQ was informed of the test date.

2.0 SUMMARY OF TEST RESULTS

The combustor (EIQ Number 27) is permitted for maximum/average SO₂, NO_x, and CO emission rates of 0.045/0.001, 4.67/0.373, and 6.22/0.497 lb/hr, respectively. Continuous emission monitoring of O₂/CO₂, SO₂, NO_x, and CO consisted of 3, 1-hour runs conducted during 750-850, 925-1025, and 1055-1155, respectively. Collection of VOC samples consisted of 3, 30-minute test runs conducted during 800-830, 930-1000, and 1100-1130, respectively.

Table 2-1 presents a summary of SO₂, NO_x, and CO emission test results. The average SO₂, NO_x, and CO mass emission rate were determined to be 0.03, 0.96, and 3.09 lb/hr, respectively. Table 2-2 presents the VOC emission test results. The average VOC mass emission rates entering and exhausting from the combustor were measured to be 38.51 and 0.76 lb/hr, respectively. Based on these values, the average VOC removal efficiency was calculated to be 98.0%. The average VOC mass emission rate of 0.76 lb/hr is below the maximum permit limitation of 31.583 lb/hr.

In Conclusion: The average SO₂, NO_x, CO, and VOC mass emission rate in units of lb/hr are below the maximum allowable limitation of the Authorization to Construct. VOC destruction removal efficiency was determined to be greater than the 95% minimum limitation required by NSPS Subpart Kb.

SO₂, NO_x, CO, and VOC mass emission rates were determined by Setco from "dry" basis concentration units of ppm, as measured with Reference Method CEMS; and, stack gas volumetric flow rate, corrected to dry standard conditions (29.92 in. Hg, 528°R). A summary of the stack gas flow rate parameters measured during the test series is presented in Table 2-3.

VOC emission concentration was determined from the laboratory analysis of the collected integrated samples by gas chromatography. The gaseous integrated samples were analyzed for C₁ - C₇, aliphatic hydrocarbons constituents against known calibration standards. All raw test data and calculations are contained in the Appendix.

TABLE 2-1

EMISSION TEST RESULTS,
COMBUSTOR EXHAUST,
RHODIA, INC.,
BATON ROUGE, LOUISIANA, SEPTEMBER 23, 2003

PARAMETER	RUN 1	RUN 2	RUN 3	AVERAGE
Test Date	9/23/2003	9/23/2003	9/23/2003	N/A
Test Time	750-850	925-1025	1055-1155	N/A
Emission Test Results				
SO ₂ Concentration, ppm	0.79	0.88	0.84	0.84
SO ₂ Mass Emission Rate, lb/hr	0.03	0.04	0.03	0.03
SO ₂ Maximum Permitted Mass Emission Rate, lb/hr				0.045
NO _x Concentration, ppm	31.08	30.70	37.45	33.08
NO _x Mass Emission Rate, lb/hr	0.90	0.89	1.10	0.96
NO _x Maximum Permitted Mass Emission Rate, lb/hr				4.67
CO Concentration, ppm	222.15	207.81	95.46	175.14
CO Mass Emission Rate, lb/hr	3.90	3.67	1.71	3.09
CO Maximum Permitted Mass Emission Rate, lb/hr				6.22
O ₂ Concentration, %	13.46	14.45	13.07	13.66

Source: Selco, 2003

TABLE 2-2

EMISSION TEST RESULTS,
COMBUSTOR,
RHODIA, INC.,
BATON ROUGE, LOUISIANA, SEPTEMBER 23, 2003

PARAMETER	RUN 1	RUN 2	RUN 3	AVERAGE
Test Date	9/23/2003	9/23/2003	9/23/2003	N/A
Test Time	800-830	930-1000	1100-1130	N/A
VOC ¹ Emission Test Results				
Inlet VOC ¹ Mass Flow Rate, lb/hr	35.53	33.52	46.49	38.51
Exhaust VOC ¹ Mass Flow Rate, lb/hr	0.91	0.67	0.70	0.76
EIQ Maximum Permitted VOC ¹ Mass Flow Rate, lb/hr				31.583
VOC ¹ Destruction Removal Efficiency ² , %	97.4	98.0	98.5	98.0
NSPS Subpart Kb Minimum VOC ¹ Destruction Removal Efficiency, %				95
Operational Data				
Firebox Temperature, °F	1549	1561	1561	1557

Source: Selco, 2003

Notes:

- ¹ VOC - Volatile Organic Carbon compounds (total hydrocarbons excluding methane and ethane)
² Destruction Removal Efficiency = (Inlet - Outlet)/(Inlet) × 100%.

TABLE 2-3
FLOW RATE PARAMETERS,
COMBUSTOR,
RHODIA, INC.,
BATON ROUGE, LOUISIANA, SEPTEMBER 23, 2003

PARAMETER	RUN 1	RUN 2	RUN 3	AVERAGE
Inlet Gas Stream				
Stack Gas Temperature, °F	80.2	87.4	99.3	89.0
Stack Gas Temperature, °R	540.2	547.4	559.3	549.0
Moisture Content ¹ , % volume	4.10	3.74	6.83	4.89
Velocity, ft/s	7.67	7.94	8.28	7.96
Volumetric Flow Rate, ft ³ /min	253.1	262.0	273.2	262.8
Volumetric Flow Rate ¹ , ft ³ /min	237.3	243.3	240.7	240.4
Outlet Gas Stream				
Stack Gas Temperature, °F	1385.1	1322.2	1335.7	1347.7
Stack Gas Temperature, °R	1845.1	1782.2	1795.7	1807.7
Moisture Content ¹ , % volume	8.23	8.67	9.44	8.78
Velocity, ft/s	16.40	15.98	16.44	16.27
Volumetric Flow Rate, ft ³ /min	15360.2	14966.9	15397.7	15241.6
Volumetric Flow Rate ¹ , ft ³ /min	4031.0	4046.8	4102.7	4060.2

Source: Setco, 2003

Notes:

¹ Corrected to dry standard conditions.

4/53215v8C

AI/AI/co

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SEN-AA

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US EPA, DALLAS, TX
ASSOCIATE DIRECTOR



Eco Services Operations Corp.
Houston Plant

16 JUL 25 AM 10:11
COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

CERTIFIED MAIL: Return Receipt Requested (7015 3010 0000 3182 3806)

July 20, 2016

Mr. Jeff Robinson
Chief, Air Permits Section (6PD-R)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Eco Services Operations LLC Benzene NESHAP, Subpart FF, Quarterly Report
April 1, 2016 to June 30, 2016
EPA ID No.: TXD008099079

Dear Mr. Robinson:

Eco Services Operations Corp. in Houston, Texas owns and operates a Sulfuric Acid Regeneration Plant. In addition to the regeneration of sulfuric acid, the plant incinerates hazardous waste, under the conditions of the facility's RCRA Part B Permit (HW-50095).

Eco Services receives benzene waste streams from offsite customers to use as fuel in the Sulfuric Acid Regeneration Unit No. 2 (SARU) industrial furnace which is permitted under 40 CFR 266 Subpart H. Thus, the SARU industrial furnace is a treatment process for the waste and are exempt from testing and monitoring per 40 CFR 61.348(d)(1) and 61.354(a). The benzene waste streams may be stored in one or more of six treatment services (TS) storage tanks prior to treatment. The tanks are vented to the SARU industrial furnace for vapor control per 40 CFR 61.343(a). The TS Vapor Combustor provides backup vapor control for the six TS tanks. The site has no oil-water separators or individual drain systems used to convey benzene waste.

Eco Services submits this quarterly report in accordance with the reporting requirements of 40 CFR 61.357:

- Pursuant to 40 CFR 61.357(d)(6), Eco Services Operations LLC hereby certifies that all required inspections were performed. The required inspections are itemized in Table 1.
- Pursuant to 61.357(d)(7)(iv)(G), there has been no change in the location at which the tank vent stream is introduced into the primary control device flame zone, the SARU industrial furnace.

Eco Services Operations Corp.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Mr. Robinson
Page 2

- Pursuant to 40 CFR 61.357(d)(7)(iv)(A), there have been no 3-hour periods during which the average temperature of the gas stream in the combustion zone for the TS Vapor Combustor was <50°F below design temperature when being used as the control device for the TS storage tanks.

Please contact David Laurie at (713) 924-1484 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Bureau of Air Quality Control, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

Table 1

**Eco Services Operations Corp.
Houston, Texas
Benzene Waste NESHAP Inspection Requirements
For Quarterly Period Ending: June 30, 2016**

Inspection	Was inspection performed?	Exceptions Noted
Annual Method 21 inspections of tank covers and openings per 61.343(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of tank covers and openings per 61.343(c)	x Yes Except as Noted	
Initial and annual Method 21 inspections of containers per 61.345(a)(1)	x Yes Except as Noted	
Initial and quarterly visual inspections of containers per 61.345(b)	x Yes Except as Noted	
Annual Method 21 inspections of treatment system openings (Regeneration Unit No. 2) per 61.348(e)(3)(ii)	x Yes Except as Noted	
Annual Method 21 inspections of closed vent systems (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of closed vent systems and control devices (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace, including the vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(f)	x Yes Except as Noted	
Daily inspections of control device continuous monitoring data (temperature of TS vapor combustor and "selected parameter" on Regeneration Unit No. 2 industrial furnace) per 61.354(c)	x Yes Except as Noted	

Note: Where annual inspections are listed, they were not necessarily performed during this quarterly reporting period, but have been performed in the last year.

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A1/A1/co

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Eco Services Operations Corp.
Houston Plant

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U.S. EPA, DALLAS, TX
ASSOCIATE DIRECTOR

16 JUL 25 AM 10:11

COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

Certified Mail; Return Receipt Requested (7015 3010 0000 3182 3813)

July 20, 2016

Mr. Jeff Robinson
Chief, Air Permits Section
6PD-R
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: HON Semiannual Report per 40 CFR 63.152(c)
TCEQ Identification Nos.: RN100220581/CN604683482

Dear Mr. Robinson:

Eco Services Operations Corp. (Eco Services), formally Eco Services Operations LLC, is an offsite treatment facility for 40 CFR Part 63 Subpart G (HON) Group 1 wastewater streams and residuals. Eco Services submitted a letter on August 6, 1998 certifying that it will manage and treat any HON-regulated Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with the applicable requirements in 40 CFR 63.133 through 63.147. On November 8, 2006, Eco Services submitted the Notification of Compliance Status (NCS) Report per 40 CFR 63.152(b). Per 40 CFR 63.146(c) and 63.152(c), semiannual reports are also required. This submittal includes the semiannual report for the period of January 1 to June 30, 2016.

Specific elements of the semi-annual report are listed below:

63.146(c) - For each tank storing HON Group 1 wastewater or residuals, the results of each inspection in which a control equipment failure (a gasket, joint, lid, cover, or door has a crack or gap, or is broken) was identified. Include the date of the inspection, identification of each waste management unit (tank) in which a control equipment failure was detected, description of the failure, and description of the nature of and date the repair was made.

HON Group 1 wastewater and residuals may be stored in one or more of the six (6) Treatment Services (TS) tanks. There were no control equipment failures identified for these tanks in the reporting period.

63.146(d) - Treatment process monitoring data.

The treatment process is a RCRA unit and is exempt from monitoring per 63.138(h).

Eco Services Operations Corp.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Mr. Jeff Robinson
Page 2

63.146(e)(1), Table 20 item (1) - For each tank storing HON Group 1 wastewater or residuals that vents to a thermal incinerator for vapor control, report all daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected.

The TS tanks normally vent to the Regeneration Unit No. 2 (Regen 2) sulfuric acid furnace which is exempt from monitoring per 63.139(d)(4)(iv). In the event that Regen 2 is unavailable, tank vapors are routed to the Treatment Services Vapor Combustor (TSVC). The TSVC minimum combustion temperature is 1,500°F per operating permit. During this reporting period, there were no instances of the daily average TSVC combustion temperature being under 1,500°F while TS tanks were venting to it. There were no days when insufficient monitoring data were collected during this reporting period.

63.146(e)(1), Table 20 item (8)(i) and 63.148(j)(2) - For closed vent systems used to convey HON wastewater tank vapors to a control device, any bypass valves and lines must be equipped with a flow indicator or car-seal. Report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor (flow indicator) is not operating.

The vent stream was not diverted to the atmosphere this reporting period. We do not use flow indicators for this purpose.

63.146(e)(1), Table 20 item (8)(ii) and 63.148(j)(3) - Report the times and durations of any periods when the bypass valves are moved to the diverting position, the seal has been changed, the seal mechanism is broken, or the key to unlock the bypass line valve was checked out.

There were no bypass valve or car-seal abnormalities this reporting period. We do not use lock-and-key mechanisms for this purpose.

Please contact David Laurie at 713-924-1484 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Director, Health and Human Services Department, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

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ASSOCIATE DIRECTOR

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Eco Services LLC
Houston Plant

COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

July 31, 2016

At / At / Co

Compliance Assurance and Enforcement Division (6EN)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Subject: Eco Services LLC
Houston, Texas Plant
NSPS Kb Semiannual Report – 1st Half 2016
Permit No. O-03049

To Whom It May Concern:

Per the 40 CFR Part 60 (NSPS) Subpart Kb operating plan for the Houston plant, the following tanks are subject to vapor control, or assumed to be subject to vapor control, per NSPS Subpart Kb.

Tank No.	Description	Contents	Control Device
B-1 B-2	Treatment Services (TS) Tanks	Volatile organic liquids (VOL)	Regeneration Unit No.2 Furnace with TS Vapor Combustor (TSVC) as backup
Tk 48 Tk 49 Tk 53 Tk 56* Tk 78*	Spent Acid (SA) Tanks	Spent sulfuric acid with potential for containing volatile organic liquids	Regeneration Unit No.2 Furnace with Spent Acid Vapor Combustor as backup.

**Available information indicates that tanks 56 and 78 have not been reconstructed or modified since 1984, but are listed for completeness.*

40 CFR 60.7 requires a semiannual report for these tanks.

Eco Services LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012



Eco Services LLC
Houston Plant

Spent Acid Tanks Summary Report

Pollutant	VOC
Reporting period dates:	1/1/2016 to 6/30/2016
Company:	Eco Services LLC Houston site
Emission Limitation:	25.93 lbs/hr when venting to secondary APVC (vapor combustor)
Address:	8615 Manchester Houston, TX 77012
Monitor Manufacturer and Model No:	Not Applicable
Date of Latest CMS Certification or Audit:	Not Applicable
Process Unit Description:	Spent Acid Tank Farm
Total source operating time in reporting period:	4,344 hours
Duration of excess emissions in reporting period due to:	
a. Startup/shutdown	0.0 hours
b. Control equipment problems	0.00 hours
c. Process problems	516.23 hours
d. Other known causes	0.0 hours
e. Unknown causes	0.0 hours
Total duration of excess emission	516.23 hours
Total duration of excess emissions	11.8 %

Eco Services LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012



Eco Services LLC
Houston Plant

TS Tanks Summary Report

Pollutant	VOC
Reporting period dates:	1/1/2016 to 6/30/2016
Company:	Eco Services LLC Houston site
Emission Limitation:	22.22 lbs/hr when venting to TSVC
Address:	8615 Manchester Houston, TX 77012
Monitor Manufacturer and Model No:	Not Applicable
Date of Latest CMS Certification or Audit:	Not Applicable
Process Unit Description:	Treatment Services Tank Farm
Total source operating time in reporting period:	4,344 hours
Duration of excess emissions in reporting period due to:	
f. Startup/shutdown	0 hours
g. Control equipment problems	0 hours
h. Process problems	0.0 hours
i. Other known causes	0.0 hours
j. Unknown causes	0 hours
Total duration of excess emission	0.0 hours
Total duration of excess emissions	0.0 %

If you have any questions concerning this matter, please call David Laurie at (713) 924-1484.

Sincerely,

A handwritten signature in blue ink that reads "William J. McConnell".

William McConnell
Plant Manager
Solvay USA Inc.

Attachment

Eco Services LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012



Eco Services LLC
Houston Plant

Cc: Executive Director, MC-109
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Air Section Manager
Texas Commission on Environmental Quality
5425 Polk Avenue, Suite H
Houston, TX 77023-1486

Bureau Chief
Bureau of Air Quality Control
City of Houston
7411 Park Place Blvd.
Houston, TX 77087-4441

Director
Harris County Public Health and Environmental Services
Environmental Public Health Division
101 S. Richey Suite G
Pasadena, TX 77506

Eco Services LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012

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US EPA, DALLAS, TX
ASSOCIATE DIRECTOR

EN-AA



Eco Services Operations LLC
Houston Plant

16 MAY -6 AM 11:51
COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

AI/AI/CO

CERTIFIED MAIL: Return Receipt Requested (7011 2000 0001 4575 1699)

May 3, 2016

Mr. Jeff Robinson
Chief, Air Permits Section (6PD-R)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Eco Services Operations LLC Benzene NESHAP, Subpart FF, Quarterly Report
January 1, 2016 to March 31, 2016
EPA ID No.: TXD008099079

Dear Mr. Robinson:

Eco Services Operations LLC in Houston, Texas owns and operates a Sulfuric Acid Regeneration Plant. In addition to the regeneration of sulfuric acid, the plant incinerates hazardous waste, under the conditions of the facility's RCRA Part B Permit (HW-50095).

Eco Services receives benzene waste streams from offsite customers to use as fuel in the Sulfuric Acid Regeneration Unit No. 2 (SARU) industrial furnace which is permitted under 40 CFR 266 Subpart H. Thus, the SARU industrial furnace is a treatment process for the waste and are exempt from testing and monitoring per 40 CFR 61.348(d)(1) and 61.354(a). The benzene waste streams may be stored in one or more of six treatment services (TS) storage tanks prior to treatment. The tanks are vented to the SARU industrial furnace for vapor control per 40 CFR 61.343(a). The TS Vapor Combustor provides backup vapor control for the six TS tanks. The site has no oil-water separators or individual drain systems used to convey benzene waste.

Eco Services submits this quarterly report in accordance with the reporting requirements of 40 CFR 61.357:

- Pursuant to 40 CFR 61.357(d)(6), Eco Services Operations LLC hereby certifies that all required inspections were performed. The required inspections are itemized in Table 1.
- Pursuant to 61.357(d)(7)(iv)(G), there has been no change in the location at which the tank vent stream is introduced into the primary control device flame zone, the SARU industrial furnace.

Eco Services Operations LLC
Houston Plant
8615 Manchester Street
Houston, TX 77012

Mr. Robinson

Page 2

- Pursuant to 40 CFR 61.357(d)(7)(iv)(A), there have been no 3-hour periods during which the average temperature of the gas stream in the combustion zone for the TS Vapor Combustor was <50°F below design temperature when being used as the control device for the TS storage tanks.

Please contact Floyd Dickerson at (713) 924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Bureau of Air Quality Control, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

Table 1

**Eco Services Operations LLC
Houston, Texas
Benzene Waste NESHAP Inspection Requirements
For Quarterly Period Ending: March 31, 2016**

Inspection	Was inspection performed?	Exceptions Noted
Annual Method 21 inspections of tank covers and openings per 61.343(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of tank covers and openings per 61.343(c)	x Yes Except as Noted	
Initial and annual Method 21 inspections of containers per 61.345(a)(1)	x Yes Except as Noted	
Initial and quarterly visual inspections of containers per 61.345(b)	x Yes Except as Noted	
Annual Method 21 inspections of treatment system openings (Regeneration Unit No. 2) per 61.348(e)(3)(ii)	x Yes Except as Noted	
Annual Method 21 inspections of closed vent systems (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of closed vent systems and control devices (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace, including the vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(f)	x Yes Except as Noted	
Daily inspections of control device continuous monitoring data (temperature of TS vapor combustor and "selected parameter" on Regeneration Unit No. 2 industrial furnace) per 61.354(c)	x Yes Except as Noted	

Note: Where annual inspections are listed, they were not necessarily performed during this quarterly reporting period, but have been performed in the last year.

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US EPA, DALLAS TX
ASSOCIATE DIRECTOR

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Eco Services Operations Corp.
Houston Plant

16 NOV -4 PM 2:47

COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

CERTIFIED MAIL: Return Receipt Requested (7015 3010 0000 3182 3868)

October 27, 2016

Mr. Jeff Robinson
Chief, Air Permits Section (6PD-R)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

AI / AI / CO

Re: Eco Services Operations LLC Benzene NESHAP, Subpart FF, Quarterly Report
July 1, 2016 to September 30, 2016
EPA ID No.: TXD008099079

Dear Mr. Robinson:

Eco Services Operations Corp. in Houston, Texas owns and operates a Sulfuric Acid Regeneration Plant. In addition to the regeneration of sulfuric acid, the plant incinerates hazardous waste, under the conditions of the facility's RCRA Part B Permit (HW-50095).

Eco Services receives benzene waste streams from offsite customers to use as fuel in the Sulfuric Acid Regeneration Unit No. 2 (SARU) industrial furnace which is permitted under 40 CFR 266 Subpart H. Thus, the SARU industrial furnace is a treatment process for the waste and are exempt from testing and monitoring per 40 CFR 61.348(d)(1) and 61.354(a). The benzene waste streams may be stored in one or more of six treatment services (TS) storage tanks prior to treatment. The tanks are vented to the SARU industrial furnace for vapor control per 40 CFR 61.343(a). The TS Vapor Combustor provides backup vapor control for the six TS tanks. The site has no oil-water separators or individual drain systems used to convey benzene waste.

Eco Services submits this quarterly report in accordance with the reporting requirements of 40 CFR 61.357:

- Pursuant to 40 CFR 61.357(d)(6), Eco Services Operations LLC hereby certifies that all required inspections were performed. The required inspections are itemized in Table 1.
- Pursuant to 61.357(d)(7)(iv)(G), there has been no change in the location at which the tank vent stream is introduced into the primary control device flame zone, the SARU industrial furnace.

Eco Services Operations Corp.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Mr. Robinson

Page 2

- Pursuant to 40 CFR 61.357(d)(7)(iv)(A), there have been no 3-hour periods during which the average temperature of the gas stream in the combustion zone for the TS Vapor Combustor was <50°F below design temperature when being used as the control device for the TS storage tanks.

Please contact me at (713) 924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Bureau of Air Quality Control, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

Table 1

**Eco Services Operations Corp.
Houston, Texas
Benzene Waste NESHAP Inspection Requirements
For Quarterly Period Ending: September 30, 2016**

Inspection	Was inspection performed?	Exceptions Noted
Annual Method 21 inspections of tank covers and openings per 61.343(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of tank covers and openings per 61.343(c)	x Yes Except as Noted	
Initial and annual Method 21 inspections of containers per 61.345(a)(1)	x Yes Except as Noted	
Initial and quarterly visual inspections of containers per 61.345(b)	x Yes Except as Noted	
Annual Method 21 inspections of treatment system openings (Regeneration Unit No. 2) per 61.348(e)(3)(ii)	x Yes Except as Noted	
Annual Method 21 inspections of closed vent systems (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of closed vent systems and control devices (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace, including the vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(f)	x Yes Except as Noted	
Daily inspections of control device continuous monitoring data (temperature of TS vapor combustor and "selected parameter" on Regeneration Unit No. 2 industrial furnace) per 61.354(c)	x Yes Except as Noted	

Note: Where annual inspections are listed, they were not necessarily performed during this quarterly reporting period, but have been performed in the last year.

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Eco Services Operations Corp.
Houston Plant

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US EPA, DALLAS, TX
ASSOCIATE DIRECTOR

17 APR -3 PM 4:15

COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

CERTIFIED MAIL: Return Receipt Requested (7015 1520 0003 4945 8385)

April 27, 2017

Mr. Jeff Robinson
Chief, Air Permits Section (6PD-R)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

AI / AI / CO

FRS 116000460901

Re: Eco Services Operations LLC Benzene NESHA, Subpart FF, Quarterly Report
January 1, 2017 to March 31, 2017
EPA ID No.: TXD008099079

Dear Mr. Robinson:

Eco Services Operations Corp. in Houston, Texas owns and operates a Sulfuric Acid Regeneration Plant. In addition to the regeneration of sulfuric acid, the plant incinerates hazardous waste, under the conditions of the facility's RCRA Part B Permit (HW-50095).

Eco Services receives benzene waste streams from offsite customers to use as fuel in the Sulfuric Acid Regeneration Unit No. 2 (SARU) industrial furnace which is permitted under 40 CFR 266 Subpart H. Thus, the SARU industrial furnace is a treatment process for the waste and are exempt from testing and monitoring per 40 CFR 61.348(d)(1) and 61.354(a). The benzene waste streams may be stored in one or more of six treatment services (TS) storage tanks prior to treatment. The tanks are vented to the SARU industrial furnace for vapor control per 40 CFR 61.343(a). The TS Vapor Combustor provides backup vapor control for the six TS tanks. The site has no oil-water separators or individual drain systems used to convey benzene waste.

Eco Services submits this quarterly report in accordance with the reporting requirements of 40 CFR 61.357:

- Pursuant to 40 CFR 61.357(d)(6), Eco Services Operations Corp. hereby certifies that all required inspections were performed. The required inspections are itemized in Table 1.
- Pursuant to 61.357(d)(7)(iv)(G), there has been no change in the location at which the tank vent stream is introduced into the primary control device flame zone, the SARU industrial furnace.

Eco Services Operations Corp.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Mr. Robinson
Page 2

- Pursuant to 40 CFR 61.357(d)(7)(iv)(A), there have been no 3-hour periods during which the average temperature of the gas stream in the combustion zone for the TS Vapor Combustor was <50°F below design temperature when being used as the control device for the TS storage tanks.

Please contact Floyd Dickerson at (713) 924-1408 if you have any comments or require any additional information on this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "William McConnell".

William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Bureau of Air Quality Control, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

Table 1

**Eco Services Operations Corp.
Houston, Texas
Benzene Waste NESHAP Inspection Requirements
For Quarterly Period Ending: March 31, 2017**

Inspection	Was inspection performed?	Exceptions Noted
Annual Method 21 inspections of tank covers and openings per 61.343(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of tank covers and openings per 61.343(c)	x Yes Except as Noted	
Initial and annual Method 21 inspections of containers per 61.345(a)(1)	x Yes Except as Noted	
Initial and quarterly visual inspections of containers per 61.345(b)	x Yes Except as Noted	
Annual Method 21 inspections of treatment system openings (Regeneration Unit No. 2) per 61.348(e)(3)(ii)	x Yes Except as Noted	
Annual Method 21 inspections of closed vent systems (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of closed vent systems and control devices (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace, including the vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(f)	x Yes Except as Noted	
Daily inspections of control device continuous monitoring data (temperature of TS vapor combustor and "selected parameter" on Regeneration Unit No. 2 industrial furnace) per 61.354(c)	x Yes Except as Noted	

Note: Where annual inspections are listed, they were not necessarily performed during this quarterly reporting period, but have been performed in the last year.

17 JAN 11 AM 11:04

Certified Mail: Return Receipt Requested (7011 2000 0001 4575 4898)

COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

January 5, 2017

Compliance Assurance and Enforcement Division (6EN)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

A1 / A1 / CO

Subject: Eco Services Operations Corp.
Houston, Texas Plant
NSPS Kb Semiannual Report – 2nd Half 2016
Permit No. O-03049

To Whom It May Concern:

Per the 40 CFR Part 60 (NSPS) Subpart Kb operating plan for the Houston plant, the following tanks are subject to vapor control, or assumed to be subject to vapor control, per NSPS Subpart Kb.

Tank No.	Description	Contents	Control Device
B-1 B-2	Treatment Services (TS) Tanks	Volatile organic liquids (VOL)	Regeneration Unit No.2 Furnace with TS Vapor Combustor (TSVC) as backup
Tk 48 Tk 49 Tk 53 Tk 56* Tk 78*	Spent Acid (SA) Tanks	Spent sulfuric acid with potential for containing volatile organic liquids	Regeneration Unit No.2 Furnace with Spent Acid Vapor Combustor as backup.

**Available information indicates that tanks 56 and 78 have not been reconstructed or modified since 1984, but are listed for completeness.*

40 CFR 60.7 requires a semiannual report for these tanks.

Spent Acid Tanks Summary Report

Pollutant	VOC
Reporting period dates:	8/1/2016 to 12/31/2016
Company:	Eco Services Houston site
Emission Limitation:	25.93 lbs/hr when venting to secondary APVC (vapor combustor)
Address:	8615 Manchester Houston, TX 77012
Monitor Manufacturer and Model No:	Not Applicable
Date of Latest CEMS Certification or Audit:	Not Applicable
Process Unit Description:	Spent Acid Tank Farm
Total source operating time in reporting period:	4,416 hours
Duration of excess emissions in reporting period due to:	
a. Startup/shutdown	0.0 hours
b. Control equipment problems	0.00 hours
c. Process problems	120.83 hours
d. Other known causes	0.0 hours
e. Unknown causes	0.0 hours
Total duration of excess emission	120.83 hours
Total duration of excess emissions	2.74 %

TS Tanks Summary Report

Pollutant	VOC
Reporting period dates:	8/1/2016 to 12/31/2016
Company:	Eco Services Houston site
Emission Limitation:	22.22 lbs/hr when venting to TSVC
Address:	8615 Manchester Houston, TX 77012
Monitor Manufacturer and Model No:	Not Applicable
Date of Latest CMS Certification or Audit:	Not Applicable
Process Unit Description:	Treatment Services Tank Farm
Total source operating time in reporting period:	4,416 hours
Duration of excess emissions in reporting period due to:	
f. Startup/shutdown	0 hours
g. Control equipment problems	0 hours
h. Process problems	80.0 hours
i. Other known causes	0.0 hours
j. Unknown causes	0 hours
Total duration of excess emission	80.0 hours
Total duration of excess emissions	1.81 %

If you have any questions concerning this matter, please call Floyd Dickerson at (713) 924-1408.

Sincerely,



William McConnell
Plant Manager

Eco Services Corp.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Cc: Executive Director, MC-109
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Air Section Manager
Texas Commission on Environmental Quality
5425 Polk Avenue, Suite H
Houston, TX 77023-1486

Bureau Chief
Bureau of Air Quality Control
City of Houston
7411 Park Place Blvd.
Houston, TX 77087-4441

Director
Harris County Public Health and Environmental Services
Environmental Public Health Division
101 S. Richey Suite G
Pasadena, TX 77506

Eco Services Corp.
Houston Plant
8615 Manchester Street
Houston, TX 77012



Eco Services Operations Corp.
Houston Plant

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ASSOCIATE DIRECTOR

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COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

Certified Mail; Return Receipt Requested (7011 2000 0001 4575 4935)

January 24, 2017

Mr. Jeff Robinson
Chief, Air Permits Section
6PD-R
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: HON Semiannual Report per 40 CFR 63.152(c)
TCEQ Identification Nos.: RN100220581/CN604683482

Dear Mr. Robinson:

Eco Services Operations Corp. (Eco Services), formally Eco Services Operations LLC, is an offsite treatment facility for 40 CFR Part 63 Subpart G (HON) Group 1 wastewater streams and residuals. Eco Services submitted a letter on August 6, 1998 certifying that it will manage and treat any HON-regulated Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with the applicable requirements in 40 CFR 63.133 through 63.147. On November 8, 2006, Eco Services submitted the Notification of Compliance Status (NCS) Report per 40 CFR 63.152(b). Per 40 CFR 63.146(c) and 63.152(c), semiannual reports are also required. This submittal includes the semiannual report for the period of July 1 to December 31, 2016.

Specific elements of the semi-annual report are listed below:

63.146(c) - For each tank storing HON Group 1 wastewater or residuals, the results of each inspection in which a control equipment failure (a gasket, joint, lid, cover, or door has a crack or gap, or is broken) was identified. Include the date of the inspection, identification of each waste management unit (tank) in which a control equipment failure was detected, description of the failure, and description of the nature of and date the repair was made.

HON Group 1 wastewater and residuals may be stored in one or more of the six (6) Treatment Services (TS) tanks. There were no control equipment failures identified for these tanks in the reporting period.

63.146(d) - Treatment process monitoring data.

The treatment process is a RCRA unit and is exempt from monitoring per 63.138(h).

Eco Services Operations Corp.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Mr. Jeff Robinson

Page 2

63.146(e)(1), Table 20 item (1) - For each tank storing HON Group 1 wastewater or residuals that vents to a thermal incinerator for vapor control, report all daily average temperatures that are outside the range established in the NCS or operating permit and all operating days when insufficient monitoring data are collected.

The TS tanks normally vent to the Regeneration Unit No. 2 (Regen 2) sulfuric acid furnace which is exempt from monitoring per 63.139(d)(4)(iv). In the event that Regen 2 is unavailable, tank vapors are routed to the Treatment Services Vapor Combustor (TSVC). The TSVC minimum combustion temperature is 1,500°F per operating permit. During this reporting period, there were no instances of the daily average TSVC combustion temperature being under 1,500°F while TS tanks were venting to it. There were no days when insufficient monitoring data were collected during this reporting period.

63.146(e)(1), Table 20 item (8)(i) and 63.148(j)(2) – For closed vent systems used to convey HON wastewater tank vapors to a control device, any bypass valves and lines must be equipped with a flow indicator or car-seal. Report the times and durations of all periods when the vent stream is diverted through a bypass line or the monitor (flow indicator) is not operating.

The vent stream was not diverted to the atmosphere this reporting period. We do not use flow indicators for this purpose.

63.146(e)(1), Table 20 item (8)(ii) and 63.148(j)(3) - Report the times and durations of any periods when the bypass valves are moved to the diverting position, the seal has been changed, the seal mechanism is broken, or the key to unlock the bypass line valve was checked out.

There were no bypass valve or car-seal abnormalities this reporting period. We do not use lock-and-key mechanisms for this purpose.

Please contact Floyd Dickerson at 713-924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Director, Health and Human Services Department, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department



Eco Services Operations Corp.
Houston Plant

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US EPA, DALLAS, TX
ASSOCIATE DIRECTOR
17 JAN 27 PM 2:59
COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

CERTIFIED MAIL: Return Receipt Requested (7011 2000 0001 4575 4942)

January 24, 2017

Mr. Jeff Robinson
Chief, Air Permits Section (6PD-R)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Eco Services Operations LLC Benzene NESHAP, Subpart FF, Quarterly Report
October 1, 2016 to December 31, 2016
EPA ID No.: TXD008099079

Dear Mr. Robinson:

Eco Services Operations Corp. in Houston, Texas owns and operates a Sulfuric Acid Regeneration Plant. In addition to the regeneration of sulfuric acid, the plant incinerates hazardous waste, under the conditions of the facility's RCRA Part B Permit (HW-50095).

Eco Services receives benzene waste streams from offsite customers to use as fuel in the Sulfuric Acid Regeneration Unit No. 2 (SARU) industrial furnace which is permitted under 40 CFR 266 Subpart H. Thus, the SARU industrial furnace is a treatment process for the waste and are exempt from testing and monitoring per 40 CFR 61.348(d)(1) and 61.354(a). The benzene waste streams may be stored in one or more of six treatment services (TS) storage tanks prior to treatment. The tanks are vented to the SARU industrial furnace for vapor control per 40 CFR 61.343(a). The TS Vapor Combustor provides backup vapor control for the six TS tanks. The site has no oil-water separators or individual drain systems used to convey benzene waste.

Eco Services submits this quarterly report in accordance with the reporting requirements of 40 CFR 61.357:

- Pursuant to 40 CFR 61.357(d)(6), Eco Services Operations Corp. hereby certifies that all required inspections were performed. The required inspections are itemized in Table 1.
- Pursuant to 61.357(d)(7)(iv)(G), there has been no change in the location at which the tank vent stream is introduced into the primary control device flame zone, the SARU industrial furnace.

Eco Services Operations Corp.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Mr. Robinson

Page 2

- Pursuant to 40 CFR 61.357(d)(7)(iv)(A), there have been no 3-hour periods during which the average temperature of the gas stream in the combustion zone for the TS Vapor Combustor was <50°F below design temperature when being used as the control device for the TS storage tanks.

Please contact Floyd Dickerson at (713) 924-1408 if you have any comments or require any additional information on this matter.

Sincerely,



William McConnell
Plant Manager

cc: Air Section Manager, TCEQ, Region 12
Bureau of Air Quality Control, City of Houston
Mr. Bob Allen, Director, Harris County Pollution Control Department

Table 1

**Eco Services Operations Corp.
Houston, Texas
Benzene Waste NESHAP Inspection Requirements
For Quarterly Period Ending: December 31, 2016**

Inspection	Was inspection performed?	Exceptions Noted
Annual Method 21 inspections of tank covers and openings per 61.343(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of tank covers and openings per 61.343(c)	x Yes Except as Noted	
Initial and annual Method 21 inspections of containers per 61.345(a)(1)	x Yes Except as Noted	
Initial and quarterly visual inspections of containers per 61.345(b)	x Yes Except as Noted	
Annual Method 21 inspections of treatment system openings (Regeneration Unit No. 2) per 61.348(e)(3)(ii)	x Yes Except as Noted	
Annual Method 21 inspections of closed vent systems (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(a)(1)(i)	x Yes Except as Noted	
Quarterly visual inspections of closed vent systems and control devices (from tanks to TS vapor combustor and Regeneration Unit No. 2 industrial furnace, including the vapor combustor and Regeneration Unit No. 2 industrial furnace) per 61.349(f)	x Yes Except as Noted	
Daily inspections of control device continuous monitoring data (temperature of TS vapor combustor and "selected parameter" on Regeneration Unit No. 2 industrial furnace) per 61.354(c)	x Yes Except as Noted	

Note: Where annual inspections are listed, they were not necessarily performed during this quarterly reporting period, but have been performed in the last year.

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US EPA, DALLAS, TX
ASSOCIATE DIRECTOR



Eco Services Operations Corp.
Houston Plant

17 MAR 14 AM 4:11
COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

CERTIFIED MAIL: RETURN RECEIPT REQUESTED (7015 1520 0003 4945 8170)

March 8, 2017

Mr. Jeffrey Robinson
Air Permits Section
Mail Code 6PD-R
U.S. EPA – Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

AI / AI / CO

RE: Benzene Waste Operations NESHAP
Industrial Solid Waste Registration No. 31019
Hazardous Waste Permit No. HW-50095
40 CFR Part 61, Subpart FF
EPA ID No. TXD008099079

Dear Mr. Robinson:

Enclosed please find a report for the 2016 calendar year Benzene Waste Operations summary for Eco Services Operations Corp.'s Houston, Texas facility. Eco Services operates a commercial industrial furnace permitted under 40 CFR Part 264 and Part 266 Subpart H by the State of Texas. This report is required under 40 CFR Part 61, Subpart FF-National Emission Standard for Benzene Waste Operations.

We have reviewed the status of each waste stream subject to regulation under this standard. In accordance with section 61.355(a), the Total Annual Benzene (TAB) quantity from this facility's waste operations was 1.9 megagrams for the operating year 2016.

Quarterly fugitive emission monitoring did not identify any emissions >500 ppm as defined in 40 CFR 61.343(a)(1)(i)(A).

Eco Services documented all daily visual inspections of the hazardous waste operations area as required in the quarterly inspection requirement as defined in 40 CFR 61.343(c). Visual inspections included sight, smell and sound observations and found no leaks in 2016.

If there are any questions, or if further information is required, please contact me at 713-924-1408.

Sincerely,

A handwritten signature in blue ink that reads "W. F. Dickerson".

W. F. Dickerson
Environmental Consultant

Attachment

Eco Services Operations Corp.
Houston Plant
8615 Manchester Street
Houston, TX 77012

CC: Air Section Manager, TCEQ, Region 12, Houston
Mr. Bob Allen, Director, Environmental Public Health Division,
Harris County Public Health and Environmental Services
City of Houston, Bureau of Air Control

Eco Services Operations Corp.
Houston Plant
8615 Manchester Street
Houston, TX 77012

Eco Services Operations Corp.

Houston, Texas

Calendar Year 2016 Annual Benzene Report

61.357(a)(2)	61.357(a)(3)(i)	61.357(a)(3)(ii)	61.357(a)(3)(iii)	61.357(a)(3)(iv)	61.357(a)(3)(v)	61.357(a)(3)(vi)	
Waste Stream	Controlled Benzene Emissions	Water Content of Waste Stream >10%	Waste Stream a Process Wastewater Stream, Product Tank Drawdown, or Landfill Leachate	Annual Waste Quantity (Mg/yr)	Range of Benzene Concentration (ppmw)	Annual Average Flow-Weighted Benzene Concentration (ppmw)	Annual Benzene Quantity (Mg/yr)
9109003	Y	Y	Y	0.0	0-10	10	0.0
9104004	Y	N	N	6.6	10-200	200	0.0
0706008	Y	N	N	0.7	0-10,000	10,000	0.0
1610002	Y	N	N	1.7	0-200	200	0.0
1409001	Y	N	N	0.1	0-1,000	1,000	0.0
1511004	Y	N	N	23.5	40,000-80,000	80,000	1.9
0912006	Y	N	N	1.2	0-1,000	1,000	0.0
9405021	Y	Y	Y	0.2	10-2,000	2,000	0.0
TOTAL						1.9	Mg/yr

Y=Yes, N= Y=Yes, N=N=No

Y=Yes, N=No Y=Yes, N=No Y=Yes, N=No

Mg/yr

453215 v8 110000 460901



Eco Services Operations Corp.
Houston Plant

September 29, 2017

Certified Mail No.: 7011 2000 0001 4575 2207

Chief, Air Branch
USEPA
Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

AI / AI / CO

RE: Eco Services Operations Corp., Houston, Texas
Title V Annual Certification Report
CN: 605004464 / RN: 100220581
Permit No.: O3049
Account No.: HG-0697-O

Dear Chief, Air Branch:

Please find attached, the Annual Title V Certification Report (PCC Part 1) and Certification by Responsible Official (OP-CR01) forms for the Eco Services Houston, Texas facility which covers the period from March 3, 2017 to August 31, 2017.

If there are any questions, please contact me at (713) 924-1434 or brad.shanks@eco-services.com.

Sincerely,

A handwritten signature in black ink that reads "Brad Shanks".

Brad Shanks
Environmental Specialist

Attachments

cc: Executive Director
Texas Commission on Environmental Quality
MC 109
P.O. Box 13087
Austin, TX 78711-3087

Air Section Manager
Texas Commission on Environmental Quality
Region 12
5425 Polk Avenue, Suite H
Houston, Texas 77023-1452

Eco Services Operations Corp.
Houston Plant
8615 Manchester Street
Houston, TX 77012

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AIR

US EPCRA RECEIVED
ASSOCIATE DIRECTOR
OCT 02 2017

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COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.



Eco Services Operations Corp.
Houston Plant

ATTACHMENT 1

Texas Commission on Environmental Quality
Federal Operating Permit Form
Permit Compliance Certification - PCC (Part 1)

Texas Commission on Environmental Quality
Federal Operating Permit Form
Permit Compliance Certification - PCC (Part 1)

AIR CO/ **HG06970** /RP

Permit Holder Name	Eco Service Operations Corp	Customer Number /CN	CN 605004464
Area Name	Houston Plant	Account Number	HG-0697-O
Operating Permit Number	O 3049	Report Submittal Date	Sep 29, 2017
Certification Period Start Date	03/03/2017	End Date	08/31/2017

I. Certification of Continuous Compliance with Permit Terms and Conditions (Indicate response by placing a 'x' in the appropriate column for each of the following questions)	Response:
<p>With the possible exception of those permit terms and conditions identified in the 'Summary of Deviations' found using, at a minimum, but not limited to, the continuous or intermittent compliance method data from monitoring, recordkeeping, reporting, or testing required by the permit and any other credible evidence or information, was the permit holder in continuous compliance with all the terms and conditions of the permit over the Certification Period?</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>II. Summary of Deviations (Indicate response by placing a 'x' in the appropriate column for each of the following questions)</p> <p>A. Were there any deviations from any permit requirements during the Certification Period that have <i>previously</i> been reported to the agency?</p> <p>If the answer to this question is 'Yes', please complete and attach Part 2 to this submittal.</p> <p>Important Note: If previously submitted reports did not contain specific information on monitoring methods, frequency and the total number of deviations experienced over the entire certification period, then use form DevRep to provide that information.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>B. Were there any deviations from any terms or conditions of the permit during the Certification Period that are <i>currently</i> being submitted to the agency?</p> <p>If the answer to this questions is 'Yes', please include the relevant reports along with this page.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Texas Commission on Environmental Quality
Federal Operating Permit Form
Permit Compliance Certification - PCC (Part 2)

AIR CO/ **HG06970** /RP

Permit Holder Name	Eco Services Operations Corp	Customer Number / CN	CN 60500464
Area Name	Houston Plant	Account Number	HG-0697-O
Operating Permit Number	O 3049	Report Submittal Date	Sep 29, 2017
Certification Period Start Date	03/03/2017	End Date	08/31/2017

Identification of Deviation Reports Submitted During the Certification Period
(Note: All reports must be certified to truth, accuracy, and completeness by the Responsible Official)

Report Date	Report Description (Name of Unit, Name of Rule, Driver for Report, etc.)	Report Submitted To	Report Previously Certified?
	Title V Deviation Report for 03/03/2017 to 08/31/2017	TCEQ, EPA	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No

AIR CO. / RP

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Eco Services Operations Corp.
Houston Plant

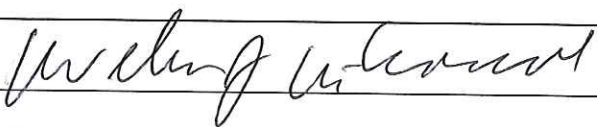
ATTACHMENT 2

Form OP-CRO1 Certification by Responsible Official Federal Operating Permit Program



Form OP-CRO1
Certification by Responsible Official
Federal Operating Permit Program

All initial permit application, revision, renewal, and reopening submittals requiring certification must be addressed using this form. Updates to site operating permit (SOP) and temporary operating permit (TOP) applications, other than public notice verification materials, must be certified prior to authorization of public notice or start of public announcement. Updates to general operating permit (GOP) applications must be certified prior to receiving an authorization to operate under a GOP.

I. IDENTIFYING INFORMATION					
RN: RN100220581		CN: CN605004464		Account No.: HG-0697-O	
Permit No.: O3049			Project No.:		
Area Name: Houston Plant			Company Name: Eco Services Operations Corp		
II. CERTIFICATION TYPE <i>(Please mark the appropriate box)</i>					
<input type="checkbox"/> Responsible Official			<input checked="" type="checkbox"/> Duly Authorized Representative		
III. SUBMITTAL TYPE <i>(Please mark the appropriate box) (Only one response can be accepted per form)</i>					
<input type="checkbox"/> SOP/TOP Initial Permit Application		<input type="checkbox"/> Update to Permit Application			
<input type="checkbox"/> GOP Initial Permit Application		<input type="checkbox"/> Permit Revision, Renewal, or Reopening			
<input checked="" type="checkbox"/> Other: <u>Annual Compliance Certification</u>					
IV. CERTIFICATION OF TRUTH					
This certification does not extend to information which is designated by the TCEQ as information for reference only.					
I, <u>William McConnell</u> certify that I am the <u>DAR</u> <i>(Certifier Name printed or typed)</i> <i>(RO or DAR)</i>					
and that, based on information and belief formed after reasonable inquiry, the statements and information dated during the time period or on the specific date(s) below, are true, accurate, and complete:					
<i>Note: Enter EITHER a Time Period OR Specific Date(s) for each certification. This section must be completed. The certification is not valid without documentation date(s).</i>					
Time Period: From _____ to _____ <div style="text-align: center;"><i>Start Date</i> <i>End Date</i></div>					
Specific Dates: <u>09/29/17</u> _____ <div style="text-align: center;"><i>Date 1</i> <i>Date 2</i> <i>Date 3</i> <i>Date 4</i> <i>Date 5</i> <i>Date 6</i></div>					
Signature: <u></u> Signature Date: <u>9/29/17</u>					
Title: <u>Plant Manager</u>					

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Eco Services Operations Corp.
Houston Plant

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US EPA, DALLAS, TX
ASSOCIATE DIRECTOR

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COMPLIANCE ASSURANCE
& ENFORCEMENT DIV.

March 27, 2018

Certified Mail No.: 7015 0640 0003 9683 1335

AI / AI / CO

Chief, Air Branch
USEPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

RE: Eco Services Operations Corp (CN 605004464)
Houston Plant (RN 100220581)
Title V Annual Certification Report
Permit No.: O3049
Account No.: HG-0697-O

Dear Chief, Air Branch:

Please find attached, the Annual Title V Certification Report (PCC Part 1) and Certification by Responsible Official (OP-CR01) forms for the Eco Services Houston, Texas facility which covers the period from September 1, 2017 to March 2, 2018.

If there are any questions, please contact me at (713) 924-1434 or brad.shanks@eco-services.com.

Sincerely,

A handwritten signature in black ink that reads "Brad Shanks".

Brad Shanks
Environmental Specialist

Attachments

cc: Executive Director
Texas Commission on Environmental Quality
MC 109
P.O. Box 13087
Austin, TX 78711-3087

Air Section Manager
Texas Commission on Environmental Quality
Region 12
5425 Polk Avenue, Suite H
Houston, Texas 77023-1452



Eco Services Operations Corp.
Houston Plant

ATTACHMENT 1

Texas Commission on Environmental Quality
Federal Operating Permit Form
Permit Compliance Certification - PCC (Part 1 and Part 2)

Texas Commission on Environmental Quality
Federal Operating Permit Form
Permit Compliance Certification - PCC (Part 1)

AIR CO/ **HG06970** /RP

Permit Holder Name	Eco Service Operations Corp	Customer Number /CN	CN 605004464
Area Name	Houston Plant	Account Number	HG-0697-O
Operating Permit Number	O 3049	Report Submittal Date	Mar 27, 2018
Certification Period Start Date	Sep 1, 2017	End Date	Mar 2, 2018

	Response:
I. Certification of Continuous Compliance with Permit Terms and Conditions (Indicate response by placing a 'x' in the appropriate column for each of the following questions)	
With the possible exception of those permit terms and conditions identified in the 'Summary of Deviations' found using, at a minimum, but not limited to, the continuous or intermittent compliance method data from monitoring, recordkeeping, reporting, or testing required by the permit and any other credible evidence or information, was the permit holder in continuous compliance with all the terms and conditions of the permit over the Certification Period?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
II. Summary of Deviations (Indicate response by placing a 'x' in the appropriate column for each of the following questions)	
A. Were there any deviations from any permit requirements during the Certification Period that have <i>previously</i> been reported to the agency? If the answer to this question is 'Yes', please complete and attach Part 2 to this submittal. Important Note: If previously submitted reports did not contain specific information on monitoring methods, frequency and the total number of deviations experienced over the entire certification period, then use form DevRep to provide that information.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
B. Were there any deviations from any terms or conditions of the permit during the Certification Period that are <i>currently</i> being submitted to the agency? If the answer to this questions is 'Yes', please include the relevant reports along with this page.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Texas Commission on Environmental Quality
Federal Operating Permit Form
Permit Compliance Certification - PCC (Part 2)

AIR CO/HG06970 /RP

Permit Holder Name	Eco Services Operations Corp	Customer Number/CN	CN 60500464
Area Name	Houston Plant	Account Number	HG-0697-O
Operating Permit Number	O 3049	Report Submittal Date	Mar 27, 2018
Certification Period Start Date	Sep 1, 2017	End Date	Mar 2, 2018

Identification of Deviation Reports Submitted During the Certification Period
(Note: All reports must be certified to truth, accuracy, and completeness by the Responsible Official)

Report Date	Report Description (Name of Unit, Name of Rule, Driver for Report, etc.)	Report Submitted To	Report Previously Certified?
	Title V Deviation Report for 09/01/2017 to 03/02/2018	TCEQ	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No

AIR CO// /RP

[illegible]



Eco Services Operations Corp.
Houston Plant

ATTACHMENT 2

Form OP-CRO1 Certification by Responsible Official Federal Operating Permit Program



Form OP-CRO1
Certification by Responsible Official
Federal Operating Permit Program

All initial permit application, revision, renewal, and reopening submittals requiring certification must be addressed using this form. Updates to site operating permit (SOP) and temporary operating permit (TOP) applications, other than public notice verification materials, must be certified prior to authorization of public notice or start of public announcement. Updates to general operating permit (GOP) applications must be certified prior to receiving an authorization to operate under a GOP.

I. IDENTIFYING INFORMATION					
RN: RN100220581		CN: CN605004464		Account No.: HG-0697-O	
Permit No.: O3049			Project No.:		
Area Name: Houston Plant			Company Name: Eco Services Operations Corp		
II. CERTIFICATION TYPE <i>(Please mark the appropriate box)</i>					
<input type="checkbox"/> Responsible Official			<input checked="" type="checkbox"/> Duly Authorized Representative		
III. SUBMITTAL TYPE <i>(Please mark the appropriate box) (Only one response can be accepted per form)</i>					
<input type="checkbox"/> SOP/TOP Initial Permit Application		<input type="checkbox"/> Update to Permit Application			
<input type="checkbox"/> GOP Initial Permit Application		<input type="checkbox"/> Permit Revision, Renewal, or Reopening			
<input checked="" type="checkbox"/> Other: <u>Annual Compliance Certification</u>					
IV. CERTIFICATION OF TRUTH					
This certification does not extend to information which is designated by the TCEQ as information for reference only.					
I, <u>William McConnell</u> certify that I am the <u>DAR</u> <i>(Certifier Name printed or typed)</i> <i>(RO or DAR)</i>					
and that, based on information and belief formed after reasonable inquiry, the statements and information dated during the time period or on the specific date(s) below, are true, accurate, and complete:					
<i>Note: Enter EITHER a Time Period OR Specific Date(s) for each certification. This section must be completed. The certification is not valid without documentation date(s).</i>					
Time Period: From _____ to _____ <div style="text-align: center;"><i>Start Date</i> <i>End Date</i></div>					
Specific Dates: <u>03/27/18</u> _____ <div style="text-align: center;"><i>Date 1</i> <i>Date 2</i> <i>Date 3</i> <i>Date 4</i> <i>Date 5</i> <i>Date 6</i></div>					
Signature: <u>William McConnell</u> Signature Date: <u>3/21/18</u>					
Title: <u>Plant Manager</u>					

July 27, 2018

VIA FEDERAL EXPRESS

Chief, Environmental Enforcement
Section
Environment and Natural Resources
Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, DC 20044-7611

Phillip Brooks
U.S. EPA Headquarters
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N.W.
Mailcode 2242A
Washington, DC 20460

Jan Gerro
U.S. EPA Region 6
1445 Ross Avenue, Suite 1200
Mailcode 6RCEA
Dallas, TX 75202

Himanshu Vyas
U.S. EPA Region 6
1445 Ross Avenue, Suite 1200
Mailcode 6ENAT
Dallas, TX 75202

Cheryl Barnett
U.S. EPA Region 6
1445 Ross Avenue, Suite 1200
Mailcode 6RCEA
Dallas, TX 75202

RE: DOJ No. 90-5-2-1-08500 Consent Decree Semi-Annual Report
U.S. v. Rhodia Inc., USDC (N.D. Ind.), Civil Action No. 2: 07-CV-134-WCL

Ladies and Gentlemen:

In accordance with Section VII of the Consent Decree ("CD") entered in the above-entitled matter, enclosed please find the Semi-Annual Report for the Houston, Texas facility. The Report, together with the other supporting documents enclosed, satisfies the obligation to report on certain matters under the CD within 30 days after the end of each half calendar year (*see* CD ¶¶ 21-23).

If you have any questions or wish to discuss this submittal, please do not hesitate to contact me.

Sincerely,



Meredith Odatto Graham
Counsel for Eco Services Operations Corp.

Enclosures



Eco Services Operations Corp.
Houston Plant

**Eco Services Operations Corp. – Houston #8 and #2 Plants
Consent Decree
Semi-Annual Report for Period Covering
January 1, 2018 through June 30, 2018
Civil Action No.: 2: 07-CV-134-WCL**

1. Effective Date:
Houston #8 - January 1, 2009
Houston #2 – April 1, 2014

2. Status of Construction or Compliance Measures Necessary to Meet Emissions Limits.
Houston #8 - The plant has now completed the construction and implementation of all compliance measures necessary to meet the Consent Decree emission limits for #8 Unit. The SO₂ abatement unit was started up on November 19, 2008.

Houston #2 - Construction has been completed and implementation of all compliance measures necessary to meet the Consent Decree emission limits for #2 Unit. The SO₂ abatement unit was started up on February 7, 2014.

The plant has completed the implementation of all compliance measures necessary to meet the Consent Decree emission limits.

3. Compliance Issues and Proposed or Implemented Solutions
Houston #8 -
 Long-Term SO₂ Limit of 1.70 lbs/ton H₂SO₄
 The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. At no time did the plant exceed this Long-Term Limit during this reporting period. The Houston #8 unit operated below the permitted 1.70 lbs. SO₂/ton of acid produced from January 1, 2018 through June 30, 2018.

 Short-Term SO₂ Limit of 3.00 lbs/ton H₂SO₄
 The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. At no time did the plant exceed this Short-Term Limit during this reporting period.



Eco Services Operations Corp.
Houston Plant

Houston #2 -

Long-Term SO₂ Limit of 1.80 lbs/ton H₂SO₄

The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. At no time did the plant exceed this Long-Term Limit during this reporting period. The Houston #2 unit operated below the permitted 1.80 lbs. SO₂/ton of acid produced from January 1, 2018 through June 30, 2018.

Short-Term SO₂ Limit of 3.00 lbs/ton H₂SO₄

The plant continuously monitored SO₂ emissions in accordance with the Consent Decree during the reporting period. At no time did the plant exceed this Short-Term Limit during this reporting period.

During the reporting period, the plant has not encountered any problems, and does not anticipate encountering any problems, with any of the conditions of the Consent Decree or any applicable permits or any other event affecting the Plant's performance under the Consent Decree.

4. Status of Permit Applications

Houston Title V air permit O-03049 was approved on June 28, 2012. The requirements for compliance with 40 CFR Part 60.83(a)(1) (sulfuric acid mist) Houston #2 and compliance with the Consent Decree SO₂ emission rates for Houston #2 have been included as conditions in the Title V air permit.

5. Operation and Maintenance Work

The plant does not currently have any operation or maintenance work pending as a result of any of the conditions of the Consent Decree.

6. Reports to Agencies

The plant submitted the following semi-annual report (attached):

- Excess Emission Reports per 40 CFR 60.7(c)-(d) for the Houston #8 Stack SO₂/O₂ analyzers and for the Houston #2 Stack SO₂ analyzer and the Converter Inlet (Main Gas Blower) SO₂ analyzer.
- SO₂ CEMS Data Assessment Reports per 40 CFR Part 60, Appendix F, to the US Environmental Protection Agency (USEPA) and TCEQ.



Eco Services Operations Corp.
Houston Plant

Analyzer/ Pollutant/Units	Reporting Period	Accuracy Assessment
Regen #2		
Stack SO ₂ (ppm)	1Q18	RATA March 12, 2018
	2Q18	CGA May 24, 2018
Converter Inlet SO ₂ (Main Gas Blower) (ppm)	1Q18	CGA March 12, 2018
	2Q18	CGA May 23, 2018
Unit #8		
Stack SO ₂ (ppm)	1Q18	RATA March 14, 2018
	2Q18	CGA May 24, 2018
Stack O ₂	1Q18	RATA March 14, 2018
	2Q18	CGA May 25, 2018



Eco Services Operations Corp.
Houston Plant

Certification Statement

I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and their attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gather and present the information contained therein. I further certify, based on my personal knowledge or on my inquiry of those individuals immediately responsible for obtaining the information, that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowingly and willfully submitting a materially false statement.

William McConnell
Name

Plant Manager - Houston
Title

William J McConnell
Signature

7/13/18
Date



Eco Services Operations Corp.
Houston Plant

Certified Mail No.: 7015 0640 0003 9683 1526
July 13, 2018

Texas Commission on Environmental Quality
Office of Permitting, Remediation and Registration
Air Permits Division, MC-163
P.O. Box 13087
Austin, Texas 78711-3087

Subject: Eco Services Operations Corp. (CN605004464)
Houston Plant (RN100220581)
Consent Decree (Civil Action No. 2:07CV134 WL)
Excess Emission Report for SO₂ per 40 CFR 60.7(c)-(d)
Data Assessment Report for SO₂ and O₂ CEMs per 40 CFR Part 60, Appendix F
Air Permit 19282 and PSD-TX-1081
Air Permit 4802 and PSD-TX-1260
Account No.: HG-0697-O

Dear Sir or Madam:

In accordance with the Consent Decree referenced above, the Eco Services Operations Corp. (Eco Services), formally Eco Services Operations LLC, Houston No. 8 became subject to 40 CFR Part 60 Subpart H, Standards of Performance for Sulfuric Acid Plants on January 1, 2009 and Houston Regen 2 became subject on April 1, 2014. Further, the Consent Decree specifies a SO₂ emission standard that is more stringent than Subpart H and also incorporates an EPA-approved Alternative Monitoring Plan (AMP). As such, the semiannual excess emission report required by 40 CFR 60.7(c)-(d) and the semiannual data assessment report (DAR) required by 40 CFR Part 60 Appendix F, Procedure 1, Section 7 will address compliance with respect to the more stringent Consent Decree requirements and the Alternative Monitoring Plan. These reports are attached for the January 1, 2018 to June 30, 2018 semiannual reporting period. The relevant SO₂ standards required by the Consent Decree and Alternative Monitoring Plan are as follows:

No. 8 Unit

- Per Consent Decree paragraph 11.b.i, emissions of SO₂ are not to exceed a long term limit of 1.70 pounds per ton of 100% sulfuric acid produced (averaged over all operating hours in a rolling 365-day period).
- Per Consent Decree paragraph 11.b.ii, emissions of SO₂ are not to exceed a short term limit of 3.00 pounds per ton of 100% sulfuric acid produced (averaged over each rolling 3-hour period). This limit does not apply during periods of startup, shutdown, and malfunction.

Eco Services Operations Corp.
Houston Plant
8615 Manchester Street
Houston, TX 77012

ECOSERVICES

Eco Services Operations Corp.
Houston Plant

As discussed in the Alternative Monitoring Plan, Eco Services uses dual analyzers to determine the conversion factor for converting monitoring data (ppm SO₂ and % O₂) into units of the standard (lbs/ton). This exceeds the "three times daily" minimum discussed in 40 CFR 60.84(b).

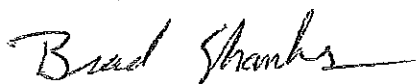
Houston Regen # 2

- Per Consent Decree paragraph 11.b.viii, emissions of SO₂ are not to exceed a long term limit of 1.80 pounds per ton of 100% sulfuric acid produced (averaged over all operating hours in a rolling 365-day period).
- Per Consent Decree paragraph 11.b.ii, emissions of SO₂ are not to exceed a short term limit of 3.00 pounds per ton of 100% sulfuric acid produced (averaged over each rolling 3-hour period). This limit does not apply during periods of startup, shutdown, and malfunction.

As discussed in the Alternative Monitoring Plan, Eco Services uses dual analyzers to determine the conversion factor for converting monitoring data (ppm SO₂) into units of the standard (lbs/ton). This exceeds the "three times daily" minimum discussed in 40 CFR 60.84(b)

Please contact me at (713) 924-1434 or brad.shanks@eco-services.com if you have any comments or require any additional information.

Sincerely,



Brad Shanks
Environmental Specialist

Attachments

cc: Air Section Manager, TCEQ Region 12
Mr. Bob Allen, Director, Harris County Pollution Control
Mr. Huimamshu Vyas, EPA Region 6
1445 Ross Avenue, Suite 1200, Mailcode 6ENAT, Dallas, TX 75202-2733
EPA Region 6, New Source Review Program
1445 Ross Avenue, Suite 1200, Dallas, TX 75202-2733



Eco Services Operations Corp.
Houston Plant

Certification Statement for NSPS Excess Emissions Report
40 CFR 60.7(d)

Eco Services Operations Corp. (CN605004464)
Houston, Texas Plant (RN10020581)
8615 Manchester Street
Houston, TX 77012
Air Permit 19282 and PSD-TX-1081
Air Permit 4802 and PSD-TX-1260
Account No.: HG-0697-O

Reporting Period: January 1, 2018 – June 30, 2018

I certify that the information contained in this report is true, accurate, and complete.

William McConnell
Name

Plant Manager - Houston
Title

Signature

A handwritten signature in cursive script, appearing to read "William McConnell", written over a horizontal line.

7/13/18
Date



Eco Services Operations Corp.
Houston Plant

Data Assessment Reports
40 CFR Part 60 Appendix F
Procedure 1, Section 7

Summary

Reporting Period: January 1, 2018 – June 30, 2018

Analyzer/ Pollutant/Units	Reporting Period	Accuracy Assessment			Any out-of- control periods for Calibration Drift Assessment?***
		Type (RATA, CGA, or RAA)	Any Out-of- Control Periods?	Notes	
Regen #2					
Stack SO ₂ (ppm)	1Q18	RATA	No	Report enclosed	No
		March 12, 2018			
	2Q18	CGA	No	Report enclosed	No
		May 24, 2018			
Converter Inlet SO ₂ (Main Gas Blower) (ppm)	1Q18	CGA	No	Report enclosed	No
		March 12, 2018			
	2Q18	CGA	No	Report enclosed	No
		May 23, 2018			
Unit #8					
Stack SO ₂ (ppm)	1Q18	RATA	No	Report enclosed	No
		March 14, 2018			
	2Q18	CGA	No	Report enclosed	No
		May 24, 2018			
Stack O ₂	1Q18	RATA	No	Report enclosed	No
		March 14, 2018			
	2Q18	CGA	No	Report enclosed	No
		May 25, 2018			

Summary Report
Gaseous and Opacity Excess Emission and Monitoring System Performance
Regen#2 1st Semi-Annual
2018

Pollutant Monitored : Regen #2 SO₂ - Stack Analyzer

Reporting Period Dates : January 1, 2018 to June 30, 2018

Company : Eco Services Operations Corp. (CN: 605004464) Houston Plant (RN: 100220581)
 Address : 8615 Manchester Street, Houston, TX 77012

Process Unit(s) Description : Sulfuric acid regeneration furnace with a caustic scrubber prior to atmospheric release

Emission Limitation : Short-Term Emissions Limit, based on the permit Alternative Monitoring Plan (AMP), not to exceed 3.00 lbs SO₂/Ton of 100% Sulfuric Acid produced (averaged over each rolling 3-hour period).

Long-Term Emissions Limit, based on the permit Alternative Monitoring Plan (AMP), not to exceed 1.80 lbs SO₂/Ton of 100% Sulfuric Acid produced (averaged over all operating hours in a rolling 365-day period).

Monitor Manufacturer and Model : Ametek Model 920

Date of Last CMS Certification or Audit : 1Q 2018 (RATA) on: 12-Mar-18 2Q 2018 (CGA) on: 24-May-18

Total Time in Operating Period :	<u>181</u>	Days
	<u>4,344</u>	Hours
Total Source Operation Time :	<u>4,185</u>	Hours
	<u>96.3%</u>	Uptime

NSPS 40 CFR 60.7, Figure 1 requires
gaseous reporting in hours

<u>Reason for Excess Emission</u> <u>Short-Term Emissions</u>	<u>Total Duration</u> <u>(Hours)</u>	<u>Reason for Monitor Downtime</u>	<u>Total Duration</u> <u>(Hours)</u>
Startup/Shutdown :	<u>N/A - limit does not apply during Startup/Shutdown</u>	Monitor Equipment Malfunction :	<u>10.0</u>
Control Equipment Problems :	<u>0.0</u>	Non-Monitor Equipment Malfunction :	<u>0.0</u>
Process Problems :	<u>0.0</u>	Quality Assurance Calibrations ¹ :	<u>95.7</u>
Other Known Causes :	<u>0.0</u>	Other Known Causes :	<u>0.0</u>
Unknown Causes :	<u>0.0</u>	Unknown Causes :	<u>0.0</u>
Total Duration of Excess Emissions :	<u>0.0</u>	Total CMS Downtime ² :	<u>105.7</u>
% Excess Emissions During Source Uptime :	<u>0.0%</u>	% Monitor Downtime During Total Time in Period :	<u>2.53%</u>

<u>Reason for Excess Emission</u> <u>Long-Term Emissions</u>	<u>Total Duration</u> <u>(Hours)</u>
Startup/Shutdown :	<u>0.0</u>
Control Equipment Problems :	<u>0.0</u>
Process Problems :	<u>0.0</u>
Other Known Causes :	<u>0.0</u>
Unknown Causes :	<u>0.0</u>
Total Duration of Excess Emissions :	<u>0.0</u>
% Excess Emissions During Source Uptime :	<u>0.0%</u>

¹Per the AMP, the SO₂ monitor is analyzed via CGAs for two different operating scenarios; 1. Normal operations and 2. Startup, Shutdown, and Maintenance periods. The monitor span values are such:
 Normal : 0 - 500 ppm SO₂
 SSM : 0 - 3,600 ppm SO₂

² The Houston plant follows the procedures specified in the EPA approved AMP for CEMS malfunctions. In accordance with the AMP, during CEMS malfunctions lasting more than 24 continuous hours, Eco Services generally will conduct Reich testing when the stack SO₂ or Converter Inlet (Main Gas Blower) SO₂ CEMS malfunctions.

On a separate page, describe any changes since last quarter in CMS, process or controls: None.

I certify that the information contained in this report is true, accurate, and complete:

Person Preparing Report : Brad Shanks, Senior Environmental Specialist

Area Manager : Justin Lynn

Brad Shanks 7-12-18

Justin Lynn 7/12/18

Summary Report
Gaseous and Opacity Excess Emission and Monitoring System Performance
Regen#2 1st Semi-Annual
2018

Pollutant Monitored : Regen #2 SO2 - Converter Inlet (Main Gas Blower) Analyzer

Reporting Period Dates : January 1, 2018 to June 30, 2018

Company : Eco Services Operations Corp. (CN: 605004464) Houston Plant (RN: 100220581)
 Address : 8615 Manchester Street, Houston, TX 77012

Process Unit(s) Description : Sulfuric acid regeneration furnace, prior to conversion from SO2 to SO3, then to 100% sulfuric acid basis. These monitor results are used (per the AMP) for the 1b SO2/ton sulfuric acid emissions calculation.

Emission Limitation : N/A, this location is not a direct measurement of emissions, but used as a component to calculate final emissions at the release point (stack) to the atmosphere per the Alternate Monitoring Plan (AMP).

Monitor Manufacturer and Model : Ametek Model 920

Date of Last CMS Certification or Audit : 1Q 2017 (CGA) on : 12-Mar-18 2Q 2017 (CGA) on : 23-May-18

Total Time in Operating Period :	<u>181</u>	Days	NSPS 40 CFR 60.7, Figure 1 requires gaseous reporting in hours
	<u>4,344</u>	Hours	
Total Source Operation Time :	<u>4,185</u>	Hours	
	<u>96.3%</u>	Uptime	

<u>Reason for Excess Emission</u> <u>Short-Term Emissions</u>	<u>Total Duration</u> <u>(Hours)</u>	<u>Reason for Monitor Downtime</u>	<u>Total Duration</u> <u>(Hours)</u>
Startup/Shutdown :		Monitor Equipment Malfunction :	<u>45.0</u>
Control Equipment Problems :	N/A	Non-Monitor Equipment Malfunction :	<u>0.0</u>
Process Problems :	Not a direct measurement for emissions.	Quality Assurance Calibrations ¹ :	<u>44.2</u>
Other Known Causes :		Other Known Causes :	<u>0.0</u>
Unknown Causes :	See above comments and AMP	Unknown Causes :	<u>0.0</u>
Total Duration of Excess Emissions :		Total CMS Downtime ² :	<u>89.2</u>
% Excess Emissions During Source Uptime :		% Monitor Downtime During Total Time in Period :	<u>2.13%</u>

<u>Reason for Excess Emission</u> <u>Long-Term Emissions</u>	<u>Total Duration</u> <u>(Hours)</u>	
Startup/Shutdown :		¹ Per the AMP and given the high percentage (%) of SO2 concentration in the gas stream, the monitor CGAs are spanned single range from 0% to 15% SO2. Additionally, only CGAs are performed each quarter of the year, a Relative Accuracy Test Audit (RATA) is not performed.
Control Equipment Problems :	N/A	
Process Problems :	Not a direct measurement for emissions.	
Other Known Causes :		
Unknown Causes :	See above comments and AMP	
Total Duration of Excess Emissions :		² The Houston plant follows the procedures specified in the EPA approved AMP for CEMS malfunctions. In accordance with the AMP, during CEMS malfunctions lasting more than 24 continuous hours, Eco Services generally will conduct Reich testing when the stack SO2 or Converter Inlet (Main Gas Blower) SO2 CEMS malfunctions.
% Excess Emissions During Source Uptime :		

On a separate page, describe any changes since last quarter in CMS, process or controls: None.

I certify that the information contained in this report is true, accurate, and complete:

Person Preparing Report : Brad Shanks, Senior Environmental Specialist

Area Manager : Justin Lynn

Brad Shanks 7-12-18

Justin Lynn 7/12/18

Summary Report
Gaseous and Opacity Excess Emission and Monitoring System Performance
Unit #8 1st Semi-Annual
2018

Pollutant Monitored : Unit #8 O2 - Stack Analyzer

Reporting Period Dates : January 1, 2018 to June 30, 2018

Company : Eco Services Operations Corp. (CN: 605004464) Houston Plant (RN: 100220581)
 Address : 8615 Manchester Street, Houston, TX 77012

Process Unit(s) Description : Sulfuric acid regeneration furnace, prior to conversion from SO2 to SO3, then to 100% sulfuric acid basis. These monitor results are used (per the AMP) for the lb SO2/ton sulfuric acid emissions calculation.

Emission Limitation : N/A, Oxygen is not a direct measurement of emissions, but used as a component to calculate final emissions at the release point (stack) to the atmosphere per the Alternate Monitoring Plan (AMP).

Monitor Manufacturer and Model : Ametek Model 920

Date of Last CMS Certification or Audit : 1Q 2017 (RATA) on : 14-Mar-18 2Q 2017 (CGA) on : 25-May-18

Total Time in Operating Period :	<u>181</u>	Days	NSPS 40 CFR 60.7, Figure 1 requires gaseous reporting in hours
	<u>4,344</u>	Hours	
Total Source Operation Time :	<u>4,274</u>	Hours	
	<u>98.4%</u>	Uptime	

<u>Reason for Excess Emission</u> <u>Short-Term Emissions</u>	<u>Total Duration</u> <u>(Hours)</u>	<u>Reason for Monitor Downtime</u>	<u>Total Duration</u> <u>(Hours)</u>
Startup/Shutdown :		Monitor Equipment Malfunction :	<u>2.6</u>
Control Equipment Problems :	N/A	Non-Monitor Equipment Malfunction :	<u>0.0</u>
Process Problems :	Not a direct measurement for emissions.	Quality Assurance Calibrations ¹ :	<u>98.9</u>
Other Known Causes :		Other Known Causes :	<u>0.0</u>
Unknown Causes :	See above comments and AMP	Unknown Causes :	<u>0.0</u>
Total Duration of Excess Emissions :		Total CMS Downtime ² :	<u>101.5</u>
% Excess Emissions During Source Uptime :		% Monitor Downtime During Total Time in Period :	<u>2.4%</u>

<u>Reason for Excess Emission</u> <u>Long-Term Emissions</u>	<u>Total Duration</u> <u>(Hours)</u>
Startup/Shutdown :	
Control Equipment Problems :	N/A
Process Problems :	Not a direct measurement for emissions.
Other Known Causes :	
Unknown Causes :	See above comments and AMP
Total Duration of Excess Emissions :	
% Excess Emissions During Source Uptime :	

¹Per the AMP and given the high percentage (%) of SO2 concentration in the gas stream, the monitor CGAs are spanned single range from 0% to 15% SO2. Additionally, only CGAs are performed each quarter of the year, a Relative Accuracy Test Audit (RATA) is not performed.

² The Houston plant follows the procedures specified in the EPA approved AMP for CEMS malfunctions. In accordance with the AMP, during CEMS malfunctions lasting more than 24 continuous hours, Eco Services generally will conduct sampling with hand-held monitors when the Stack SO2 and O2 CEMS malfunction.

On a separate page, describe any changes since last quarter in CMS, process or controls : None.

I certify that the information contained in this report is true, accurate, and complete:

Person Preparing Report : Brad Shanks, Senior Environmental Specialist

Area Manager : Ted Olszanski

Brad Shanks 7-12-18
Ted Olszanski 7/12/18

Summary Report
Gaseous and Opacity Excess Emission and Monitoring System Performance
Unit #8 1st Semi-Annual
2018

Pollutant Monitored : Unit #8 SO₂ - Stack Analyzer

Reporting Period Dates : January 1, 2018 to June 30, 2018

Company : Eco Services Operations Corp. (CN: 605004464) Houston Plant (RN: 100220581)
 Address : 8615 Manchester Street, Houston, TX 77012

Process Unit(s) Description : Sulfuric acid regeneration furnace with a caustic scrubber prior to atmospheric release

Emission Limitation : Short-Term Emissions Limit, based on the permit Alternative Monitoring Plan (AMP), not to exceed 3.00 lbs SO₂/Ton of 100% Sulfuric Acid produced (averaged over each rolling 3-hour period).

Long-Term Emissions Limit, based on the permit Alternative Monitoring Plan (AMP), not to exceed 1.70 lbs SO₂/Ton of 100% Sulfuric Acid produced (averaged over all operating hours in a rolling 365-day period).

Monitor Manufacturer and Model : Ametek Model 920

Date of Last CMS Certification or Audit : 1Q 2017 (RATA) on : 14-Mar-18 2Q 2017 (CGA) on : 24-May-18

Total Time in Operating Period :	<u>181</u>	Days
	<u>4,344</u>	Hours
Total Source Operation Time :	<u>4,274</u>	Hours
	<u>98.4%</u>	Uptime

NSPS 40 CFR 60.7, Figure 1 requires
gaseous reporting in hours

<u>Reason for Excess Emission</u> <u>Short-Term Emissions</u>	<u>Total Duration</u> <u>(Hours)</u>	<u>Reason for Monitor Downtime</u>	<u>Total Duration</u> <u>(Hours)</u>
Startup/Shutdown : <u>N/A - limit does not apply during</u>		Monitor Equipment Malfunction : <u>2.6</u>	
Control Equipment Problems : <u>0.0</u>		Non-Monitor Equipment Malfunction : <u>0.0</u>	
Process Problems : <u>0.0</u>		Quality Assurance Calibrations ¹ : <u>98.9</u>	
Other Known Causes : <u>0.0</u>		Other Known Causes : <u>0.0</u>	
Unknown Causes : <u>0.0</u>		Unknown Causes : <u>0.0</u>	
Total Duration of Excess Emissions : <u>0.0</u>		Total CMS Downtime ² : <u>101.5</u>	
% Excess Emissions During Source Uptime : <u>0.0%</u>		% Monitor Downtime During Total Time in Period : <u>2.4%</u>	

<u>Reason for Excess Emission</u> <u>Long-Term Emissions</u>	<u>Total Duration</u> <u>(Hours)</u>
Startup/Shutdown : <u>0.0</u>	
Control Equipment Problems : <u>0.0</u>	
Process Problems : <u>0.0</u>	
Other Known Causes : <u>0.0</u>	
Unknown Causes : <u>0.0</u>	
Total Duration of Excess Emissions : <u>0.0</u>	
% Excess Emissions During Source Uptime : <u>0.0%</u>	

¹ Per the AMP, the SO₂ monitor is analyzed via CGAs for two different operating scenarios; 1. Normal operations and 2. Startup, Shutdown, and Maintenance periods. The monitor span values are such:
 Normal : 0 - 500 ppm SO₂
 SSM : 0 - 3,600 ppm SO₂

² The Houston plant follows the procedures specified in the EPA approved AMP for CEMS malfunctions. In accordance with the AMP, during CEMS malfunctions lasting more than 24 continuous hours, Eco Services generally will conduct sampling with hand-held monitors when the Stack SO₂ and O₂ CEMS malfunction.

On a separate page, describe any changes since last quarter in CMS, process or controls: None.

I certify that the information contained in this report is true, accurate, and complete:

Person Preparing Report : Brad Shanks, Senior Environmental Specialist

Area Manager : Ted Olszanski

Brad Shanks 7-12-18
Ted Olszanski 7/12/18



Eco Services Operations Corp.
Houston Plant

Data Assessment Reports
40 CFR Part 60 Appendix F
Procedure 1, Section 7

Regen #2

Stack SO₂ Analyzer

1st Quarter 2018 - RATA

**RELATIVE ACCURACY TEST AUDIT REPORT
ECO SERVICES OPERATIONS CORP.
SULFURIC ACID REGENERATION UNIT NO. 2
HOUSTON, TEXAS
TEST DATE: 12 MARCH 2018
RN 100220581/CN 605004464
PERMIT NO. 4802**

Prepared for:

ECO SERVICES OPERATIONS CORP.
8715 Manchester Street
Houston, TX 77012

Prepared by:

WESTON SOLUTIONS, INC.
1400 Weston Way
West Chester, Pennsylvania 19380

April 2018

W.O. No. 15364.002.006

1. TEST PROGRAM SUMMARY

1.1 INTRODUCTION

The Eco Services Operations Corp. (Eco Services) Houston, TX facility is required to perform annual continuous emissions monitoring system (CEMS) Relative Accuracy Test Audits (RATAs) on its Sulfuric Acid Regeneration Unit No. 2 (Regen 2) scrubber stack dual range CEMS and the main gas blower CEMS. This report provides a detailed description of the monitoring procedures that were used to demonstrate compliance for each sulfur dioxide (SO₂) CEMS.

Section 1 provides a summary of the overall test program and test parameters. Section 2 provides a summary of the Relative Accuracy Test Audit (RATA) results for each CEMS tested. A description of process operations, test locations, and sampling procedures are provided in Sections 3 through 5, respectively.

Appendices A through E provide Regen 2 CEMS and process operations data, reference method CEMS data, example calculations, quality control data, and project participants, respectively.

1.2 SAMPLE PROGRAM MATRIX

Table 1-1 provides a summary of test parameters and test procedures. All CEMS RATA testing was performed on 12 and 14 March 2018.

Table 1-1
Sample Program Matrix

Sample Parameter	Sample Location	Test Method	Number of Tests	Comments
Sulfur Dioxide	Stack CEMS	EPA Method 6C	9	ppmv and % relative accuracy
Sulfur Dioxide	Main Gas Blower CEMS	Performance Specification 2 Alternative Method Section 16.2	2 x 3 ¹	% SO ₂ and % difference

1. Two reference gas cylinders were used, each cylinder challenged the SO₂ analyzer with the known SO₂ concentration three separate times.

2. RESULTS AND DISCUSSION

The CEMS certification results are shown in Table 2-1. The test results for relative accuracy met the performance specification criteria for each CEMS tested. The Eco Services stack SO₂ CEMS operates at two ranges, 0-500 ppm and 0-3,600 ppm. One RATA test was used to evaluate both CEMS ranges. Nine reference method test runs were conducted at the stack CEMS location. The relative accuracy was based upon all nine runs.

Appendix B provides detailed summaries of the relative accuracy and performance specification testing.

Table 2-1

Summary of CEMS Performance Specification Test Results

RN 100220581/CN 605004464, Permit No. 4802

Stack Analyzers	Relative Accuracy	
	Performance Required (%)	Performance Demonstrated (%)
SO ₂	20	13.5

Converter Analyzer (Main Gas Blower)	Relative Accuracy (Alternative Method 16.2)	
	Performance Required (%)	Performance Demonstrated (%)
SO ₂	15	1.7 (low conc.) 1.0 (mid conc.)

3. DESCRIPTION OF PROCESS OPERATIONS

3.1 DESCRIPTION OF SULFURIC ACID REGENERATION UNIT NO. 2

Eco Services typically injects and atomizes spent sulfuric acids, raw materials, and/or fuels into a decomposition furnace operating at temperatures between 1884°F and 2127°F, with a retention time of approximately three seconds. After decomposition, the exhaust gas passes through a waste heat boiler then enters the gas purification system. Sulfuric Acid Regeneration Unit No. 2 contains a gas purification system consisting of the following:

- A quench tower.
- A wet gas cooler.
- Two (2) wet electrostatic precipitators (ESP).

The gas purification equipment up to and including the wet ESPs is considered part of the RCRA operations. The sulfuric acid production process begins at the gas drying tower and consists of the following:

- A gas drying tower with mist filters.
- A SO₂ to SO₃ converter.
- An oleum tower.
- A SO₃ absorber.
- A mist eliminator.
- A SO₂ scrubber

Dilute sulfuric acid from the process is reused in the sulfuric acid production process, or neutralized and discharged subject to permits and provisions of local, state, and federal regulations.

4. SULFUR DIOXIDE CONTINUOUS EMISSIONS MONITORS (CEMS), LOCATIONS AND SPECIFICATIONS

Eco Services operates CEMS to measure SO₂ concentrations at the stack and the main gas blower/converter inlet. The SO₂ CEMS specifications are:

Location	Manufacturer	Serial Number	Range
Stack	Ametek	ZY-920-10628-1	Dual range: Low: 0-500 ppm SO ₂ High: 0-3,600 ppm SO ₂
Main Gas Blower	Ametek	AW-920-9965-1	Single range: 0-15% SO ₂



Eco Services Operations Corp.
Houston Plant

Data Assessment Reports
40 CFR Part 60 Appendix F
Procedure 1, Section 7

Regen #2

Stack SO₂ Analyzer

2nd Quarter 2018 - CGA



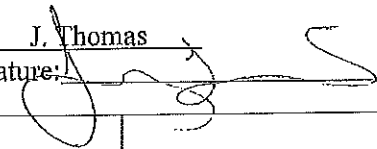
Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist
Regen 2 Stack SO₂ Analyzer (Exit)

Low Range

Date: 5/24/2018 Time: 9:39AM
Serial Number: ZY-920-10628-1

Technician: J. Thomas

Signature: 

Cylinder ID number	CC456812		CC146576			
Date of Certification	5/1/2018		4/30/2018			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Pro. 1		EPA Pro. 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	125.4	277	125.4	277	125.4	277
CEM Response value C_m (ppm)	126	277	126	277	126	277
Accuracy A (% or ppm)	0.478%	0%	0.478%	0%	0.478%	0%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Customer:	ECO SERVICES	Reference Number:	163-401184011-1
Part Number:	E02NI99E15A0005	Cylinder Volume:	144.4 CF
Cylinder Number:	CC456812	Cylinder Pressure:	2015 PSIG
Laboratory:	124 - Pasadena (SG06) - TX	Valve Outlet:	660
PGVP Number:	A32018	Certification Date:	May 01, 2018
Gas Code:	SO2,BALN		

Expiration Date: May 01, 2026

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
SULFUR DIOXIDE	125.0 PPM	125.4 PPM	G1	+/- 1.0% NIST Traceable	04/24/2018, 05/01/2018
NITROGEN	Balance				
CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	150606	CC449879	248.1 PPM SULFUR DIOXIDE/NITROGEN	+/-0.60%	Dec 17, 2020
NTRM	11010413	KAL004791	99.6 PPM SULFUR DIOXIDE/NITROGEN	+/-0.8%	Jul 28, 2023
ANALYTICAL EQUIPMENT					
Instrument/Make/Model		Analytical Principle		Last Multipoint Calibration	
SO2-M - NICOLET 6700 AHR0600411		FTIR		Apr 12, 2018	

Triad Data Available Upon Request



Signature on file
Approved for Release

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Customer: ECO SERVICES
STOREROOM
Part Number: E02NI99E15A3823
Cylinder Number: CC146576
Laboratory: 124 - Pasadena (SG06) - TX
PGVP Number: A32018
Gas Code: SO2,BALN
Reference Number: 163-401184005-1
Cylinder Volume: 144.4 Cubic Feet
Cylinder Pressure: 2015 PSIG
Valve Outlet: 660
Certification Date: Apr 30, 2018

Expiration Date: Apr 30, 2026

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/631, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which effect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
SULFUR DIOXIDE	275.0 PPM	277.0 PPM	G1	+/- 1.1% NIST Traceable	04/23/2018, 04/30/2018
NITROGEN	Balance				
CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	150606	CC450512	248.1 PPM SULFUR DIOXIDE/NITROGEN	+/-0.60%	Dec 17, 2020
ANALYTICAL EQUIPMENT					
Instrument/Make/Model		Analytical Principle		Last Multipoint Calibration	
SO2-L - (2) NICOLET 6700 AHR0600412		FTIR		Apr 25, 2018	

Triad Data Available Upon Request



Signature on file

Approved for Release



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist
Regen 2 Stack SO₂ Analyzer (Exit)


High Range

Date: 5/24/2018

Time: 9:39AM

Technician: J. Thomas

Serial Number: ZY-920-10628-1

Signature: 

Cylinder ID number	CC400268		CC98663			
Date of Certification	5/1/2018		4/30/2018			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Pro. 1		EPA Pro. 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	899.6	1986	899.6	1986	899.6	1986
CEM Response value C_m (ppm)	902	1998	904	2001	905	2002
Accuracy A (% or ppm)	0.267%	0.604%	0.489%	0.755%	0.600%	0.806%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Customer: ECO SERVICES
STOREROOM
Part Number: E02NI99E15A0051
Cylinder Number: CC400268
Laboratory: 124 - Pasadena (SG06) - TX
PGVP Number: A32018
Gas Code: SO2,BALN
Reference Number: 163-401184185-1
Cylinder Volume: 144.4 CF
Cylinder Pressure: 2015 PSIG
Valve Outlet: 660
Certification Date: May 01, 2018

Expiration Date: May 01, 2026

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
SULFUR DIOXIDE	900.0 PPM	899.6 PPM	G1	+/- 0.7% NIST Traceable	04/24/2018, 05/01/2018
NITROGEN	Balance				
CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	11010326	KAL004765	968.8 PPM SULFUR DIOXIDE/NITROGEN	+/-0.6%	May 30, 2023
ANALYTICAL EQUIPMENT					
Instrument/Make/Model		Analytical Principle		Last Multipoint Calibration	
SO2-M - (2) NICOLET 6700 AHR0600412		FTIR		Apr 25, 2018	

Triad Data Available Upon Request



Signature on file

Approved for Release

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Customer:	ECO SERVICES	Reference Number:	163-401184181-1
	STOREROOM	Cylinder Volume:	144.5 CF
Part Number:	E02NJ99E15A0472	Cylinder Pressure:	2015 PSIG
Cylinder Number:	CC98663	Valve Outlet:	660
Laboratory:	124 - Pasadena (SG06) - TX	Certification Date:	Apr 30, 2018
PGVP Number:	A32018		
Gas Code:	SO2,BALN		

Expiration Date: Apr 30, 2026

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 800/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
SULFUR DIOXIDE	1980 PPM	1986 PPM	G1	+/- 0.7% NIST Traceable	04/23/2018, 04/30/2018
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	120105	KAL003365	2502 PPM SULFUR DIOXIDE/NITROGEN	+/-0.60%	Jun 04, 2019

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
SO2-H - (2) NICOLET 6700 AHR0600412	FTIR	Apr 25, 2018

Triad Data Available Upon Request



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Eco Services Operations Corp.
Houston Plant

Data Assessment Reports
40 CFR Part 60 Appendix F
Procedure 1, Section 7

Regen #2

Converter Inlet (Main Gas Blower) SO₂ Analyzer

1st Quarter 2018 - CGA

**RELATIVE ACCURACY TEST AUDIT REPORT
ECO SERVICES OPERATIONS CORP.
SULFURIC ACID REGENERATION UNIT NO. 2
HOUSTON, TEXAS
TEST DATE: 12 MARCH 2018
RN 100220581/CN 605004464
PERMIT NO. 4802**

Prepared for:

ECO SERVICES OPERATIONS CORP.
8715 Manchester Street
Houston, TX 77012

Prepared by:

WESTON SOLUTIONS, INC.
1400 Weston Way
West Chester, Pennsylvania 19380

April 2018

W.O. No. 15364.002.006

1. TEST PROGRAM SUMMARY

1.1 INTRODUCTION

The Eco Services Operations Corp. (Eco Services) Houston, TX facility is required to perform annual continuous emissions monitoring system (CEMS) Relative Accuracy Test Audits (RATAs) on its Sulfuric Acid Regeneration Unit No. 2 (Regen 2) scrubber stack dual range CEMS and the main gas blower CEMS. This report provides a detailed description of the monitoring procedures that were used to demonstrate compliance for each sulfur dioxide (SO₂) CEMS.

Section 1 provides a summary of the overall test program and test parameters. Section 2 provides a summary of the Relative Accuracy Test Audit (RATA) results for each CEMS tested. A description of process operations, test locations, and sampling procedures are provided in Sections 3 through 5, respectively.

Appendices A through E provide Regen 2 CEMS and process operations data, reference method CEMS data, example calculations, quality control data, and project participants, respectively.

1.2 SAMPLE PROGRAM MATRIX

Table 1-1 provides a summary of test parameters and test procedures. All CEMS RATA testing was performed on 12 and 14 March 2018.

Table 1-1
Sample Program Matrix

Sample Parameter	Sample Location	Test Method	Number of Tests	Comments
Sulfur Dioxide	Stack CEMS	EPA Method 6C	9	ppmv and % relative accuracy
Sulfur Dioxide	Main Gas Blower CEMS	Performance Specification 2 Alternative Method Section 16.2	2 x 3 ¹	% SO ₂ and % difference

1. Two reference gas cylinders were used, each cylinder challenged the SO₂ analyzer with the known SO₂ concentration three separate times.

2. RESULTS AND DISCUSSION

The CEMS certification results are shown in Table 2-1. The test results for relative accuracy met the performance specification criteria for each CEMS tested. The Eco Services stack SO₂ CEMS operates at two ranges, 0-500 ppm and 0-3,600 ppm. One RATA test was used to evaluate both CEMS ranges. Nine reference method test runs were conducted at the stack CEMS location. The relative accuracy was based upon all nine runs.

Appendix B provides detailed summaries of the relative accuracy and performance specification testing.

Table 2-1

Summary of CEMS Performance Specification Test Results

RN 100220581/CN 605004464, Permit No. 4802

Stack Analyzers	Relative Accuracy	
	Performance Required (%)	Performance Demonstrated (%)
SO ₂	20	13.5

Converter Analyzer (Main Gas Blower)	Relative Accuracy (Alternative Method 16.2)	
	Performance Required (%)	Performance Demonstrated (%)
SO ₂	15	1.7 (low conc.) 1.0 (mid conc.)

3. DESCRIPTION OF PROCESS OPERATIONS

3.1 DESCRIPTION OF SULFURIC ACID REGENERATION UNIT NO. 2

Eco Services typically injects and atomizes spent sulfuric acids, raw materials, and/or fuels into a decomposition furnace operating at temperatures between 1884°F and 2127°F, with a retention time of approximately three seconds. After decomposition, the exhaust gas passes through a waste heat boiler then enters the gas purification system. Sulfuric Acid Regeneration Unit No. 2 contains a gas purification system consisting of the following:

- A quench tower.
- A wet gas cooler.
- Two (2) wet electrostatic precipitators (ESP).

The gas purification equipment up to and including the wet ESPs is considered part of the RCRA operations. The sulfuric acid production process begins at the gas drying tower and consists of the following:

- A gas drying tower with mist filters.
- A SO₂ to SO₃ converter.
- An oleum tower.
- A SO₃ absorber.
- A mist eliminator.
- A SO₂ scrubber

Dilute sulfuric acid from the process is reused in the sulfuric acid production process, or neutralized and discharged subject to permits and provisions of local, state, and federal regulations.

4. SULFUR DIOXIDE CONTINUOUS EMISSIONS MONITORS (CEMS), LOCATIONS AND SPECIFICATIONS

Eco Services operates CEMS to measure SO₂ concentrations at the stack and the main gas blower/converter inlet. The SO₂ CEMS specifications are:

Location	Manufacturer	Serial Number	Range
Stack	Ametek	ZY-920-10628-1	Dual range: Low: 0-500 ppm SO ₂ High: 0-3,600 ppm SO ₂
Main Gas Blower	Ametek	AW-920-9965-1	Single range: 0-15% SO ₂



Eco Services Operations Corp.
Houston Plant

Data Assessment Reports
40 CFR Part 60 Appendix F
Procedure 1, Section 7

Regen #2

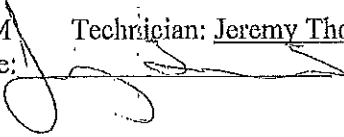
Converter Inlet (Main Gas Blower) SO₂ Analyzer

2nd Quarter 2018 - CGA



Eco Services - Houston

Quarterly Cylinder Gas Audit Checklist
MGB SO₂ Analyzer

Date: 5/23/2018 Time: 11:18AM Technician: Jeremy Thomas
Serial Number: AW-920-9965-1 Signature: 

Cylinder ID number	SG9112097		CC505202			
Date of Certification	11/29/2016		5/1/2018			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Pro. 1		EPA Pro. 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	3.956	8.187	3.956	8.187	3.956	8.187
CEM Response value C_m (ppm)	3.95	8.16	3.95	8.17	3.94	8.15
Accuracy A (% or ppm)	-0.152%	-0.330%	-0.152%	-0.208%	-0.404%	-0.452%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number: E04NI81E15A25V4 Reference Number: 122-124446588-1
Cylinder Number: SG9112097 Cylinder Volume: 155.4 CF
Laboratory: 124 - Durham (SAP) - NC Cylinder Pressure: 2015 PSIG
PGVP Number: B22014 Valve Outlet: 660
Gas Code: CO,NO,NOX,SO2,BALN Certification Date: Aug 11, 2014

Expiration Date: Aug 11, 2022

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
NOX	270.0 PPM	272.7 PPM	G1	+/- 0.8% NIST Traceable	08/04/2014, 08/11/2014
NITRIC OXIDE	270.0 PPM	272.7 PPM	G1	+/- 0.8% NIST Traceable	08/04/2014, 08/11/2014
SULFUR DIOXIDE	450.0 PPM	462.9 PPM	G1	+/- 0.9% NIST Traceable	08/04/2014, 08/11/2014
CARBON DIOXIDE	18.00 %	17.92 %	G1	+/- 0.7% NIST Traceable	08/04/2014
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	12061908	CC367439	250.8 PPM NITRIC OXIDE/NITROGEN	+/- 0.5%	May 04, 2018
PRM	12329	726612	25.02 PPM NITROGEN DIOXIDE/NITROGEN	+/- 1.5%	Feb 14, 2012
GMIS	0207201403	CC500952	14.95 PPM NITROGEN DIOXIDE/NITROGEN	+/- 1.6%	Feb 07, 2017
NTRM	12062928	CC407422	483.1 PPM SULFUR DIOXIDE/NITROGEN	+/- 0.6%	Jul 18, 2018
NTRM	12061516	CC354757	19.87 % CARBON DIOXIDE/NITROGEN	+/- 0.6%	Jan 27, 2018

The SRM, PRM or RGM noted above is only in reference to the GMIS used in the assay and not part of the analysis.

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Nicolet 6700 AHR0801549 CO2	FTIR	Jul 31, 2014
Nicolet 6700 AHR0801549 NO	FTIR	Jul 31, 2014
Nicolet 6700 AHR0801549 NO	FTIR	Jul 31, 2014
Nicolet 6700 AHR0801549 SO2	FTIR	Jul 31, 2014

Triad Data Available Upon Request



Signature on file

Approved for Release

CERTIFICATE OF ANALYSIS

Grade of Product: CERTIFIED STANDARD-SPEC

Part Number: X02NI91C15A0012
Cylinder Number: CC505202
Laboratory: 124 - Plumsteadville - PA
Analysis Date: May 01, 2018
Lot Number: 160-401184019-1

Reference Number: 160-401184019-1
Cylinder Volume: 30.7 CF
Cylinder Pressure: 407 PSIG
Valve Outlet: 660

Expiration Date: May 01, 2026

Product composition verified by direct comparison to calibration standards traceable to N.I.S.T. weights and/or N.I.S.T. Gas Mixture reference materials.

ANALYTICAL RESULTS

Component	Req Conc	Actual Concentration (Volume %)	Analytical Uncertainty
SULFUR DIOXIDE	8.260 %	8.187 %	+/- 2%
NITROGEN	Balance	Balance	



Signature on file
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Eco Services Operations Corp.
Houston Plant

Data Assessment Reports
40 CFR Part 60 Appendix F
Procedure 1, Section 7

Unit #8

Stack SO₂ Analyzer

1st Quarter 2018 – RATA

**RELATIVE ACCURACY TEST AUDIT REPORT
ECO SERVICES OPERATIONS CORP.
SULFURIC ACID UNIT NO. 8
HOUSTON, TEXAS
TEST DATE: 14 MARCH 2018
RN 100220581/CN 605004464
PERMIT NO. 19282**

Prepared for:

ECO SERVICES OPERATIONS CORP.
8715 Manchester Street
Houston, TX 77012

Prepared by:

WESTON SOLUTIONS, INC.
1400 Weston Way
West Chester, Pennsylvania 19380

April 2018

W.O. No. 15364.002.006

1. TEST PROGRAM SUMMARY

1.1 INTRODUCTION

The Eco Services Operations Corp. (Eco Services) Houston, TX facility is required to perform annual continuous emissions monitoring system (CEMS) Relative Accuracy Test Audits (RATAs) on its Sulfuric Acid Unit No. 8 (Unit 8) scrubber stack. This report provides a detailed description of the monitoring procedures that were used to demonstrate compliance for the sulfur dioxide (SO₂) and oxygen (O₂) CEMS.

Section 1 provides a summary of the overall test program and test parameters. Section 2 provides a summary of the Relative Accuracy Test Audit (RATA) results for each CEMS tested. A description of process operations, test locations, and sampling procedures are provided in Sections 3 through 5, respectively.

Appendices A through E provide Unit 8 CEMS and process operations data, reference method CEMS data, example calculations, quality control data, and project participants, respectively.

1.2 SAMPLE PROGRAM MATRIX

Table 1-1 provides a summary of test parameters and test procedures. All CEMS RATA testing was performed on 14 March 2018.

Table 1-1

Sample Program Matrix

Sample Parameter	Sample Location	Test Method	Number of Tests	Comments
Sulfur Dioxide	Stack CEMS	EPA Method 6C	11	ppmv and % relative accuracy
Oxygen	Stack CEMS	EPA Method 3A	11	% O ₂ and % difference

2. RESULTS AND DISCUSSION

The CEMS certification results are shown in Table 2-1. The test results for relative accuracy met the performance specification criteria for each CEMS tested. Eleven reference method test runs were conducted at the stack CEMS location. The relative accuracy was based upon the best nine of the eleven runs. Run No. 1 was not used in the RATA calculations due to a gas conditioner failure in the Weston CEM system. All eleven RATA test runs are reported in the appendices.

Appendix B provides detailed summaries of the relative accuracy and performance specification testing.

Table 2-1

Summary of CEMS Performance Specification Test Results

RN 100220581/CN 605004464, Permit No. 19282

Stack Analyzers	Relative Accuracy	
	Performance Required (%)	Performance Demonstrated (%)
SO ₂	≤ 20	4.7
O ₂	≤ 1	0.01

3. DESCRIPTION OF PROCESS OPERATIONS

3.1 DESCRIPTION OF SULFURIC ACID UNIT NO. 8

The Eco Services Sulfuric Acid Unit No. 8 is a virgin sulfuric acid manufacturing unit. In the virgin sulfuric acid process, molten sulfur is sprayed into the furnace and burned at a high temperature with excess air to produce sulfur dioxide (SO_2); the SO_2 is cooled in a waste heat boiler. Gaseous SO_2 is reacted with air in a catalytic converter to produce sulfur trioxide (SO_3); between the first two stages of the converter, exothermically generated heat is removed by another waste heat boiler. The SO_3 is absorbed in strong acid in an absorbing tower to produce high-concentration sulfuric acid. Exhaust gas leaves the absorbing tower passing through an SO_2 scrubber before exiting from the stack.

4. SULFUR DIOXIDE CONTINUOUS EMISSIONS MONITORS (CEMS), LOCATIONS AND SPECIFICATIONS

Eco Services operates CEMS to measure SO₂ and O₂ concentrations at the scrubber stack. The CEMS specifications are:

Location	Manufacturer	Serial Number	Range
Stack SO ₂	Ametek 920	VE-920-8700-2	0-5000 ppm SO ₂
Stack O ₂	Ametek 920	VE-920-8700-2	0-25% O ₂



Eco Services Operations Corp.
Houston Plant

Data Assessment Reports
40 CFR Part 60 Appendix F
Procedure 1, Section 7

Unit #8

Stack SO₂ Analyzer

2nd Quarter 2018 - CGA



Eco Services - Houston

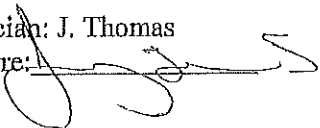
Quarterly Cylinder Gas Audit Checklist
U8 Stack SO2 Analyzer

Date: 5/25/2018

Time: 9:00AM

Technician: J. Thomas

Serial Number: VE-920-8700-2

Signature: 

Low Range

Cylinder ID number	CC456812		CC146576			
Date of Certification	5/1/2018		4/30/2018			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Pro. 1		EPA Pro. 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	125.4	277	125.4	277	125.4	277
CEM Response value C_m (ppm)	124	278	125	279	125	278
Accuracy A (% or ppm)	-1.116%	0.361%	-0.319%	0.722%	-0.319%	0.361%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Customer:	ECO SERVICES	Reference Number:	163-401184011-1
Part Number:	E02NI99E15A0005	Cylinder Volume:	144.4 CF
Cylinder Number:	CC456812	Cylinder Pressure:	2015 PSIG
Laboratory:	124 - Pasadena (SG06) - TX	Valve Outlet:	660
PGVP Number:	A32018	Certification Date:	May 01, 2018
Gas Code:	SO2,BALN		

Expiration Date: May 01, 2026

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
SULFUR DIOXIDE	125.0 PPM	125.4 PPM	G1	+/- 1.0% NIST Traceable	04/24/2018, 05/01/2018
NITROGEN	Balance				
CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	150606	CC449879	248.1 PPM SULFUR DIOXIDE/NITROGEN	+/-0.60%	Dec 17, 2020
NTRM	11010413	KAL004791	99.6 PPM SULFUR DIOXIDE/NITROGEN	+/-0.8%	Jul 28, 2023
ANALYTICAL EQUIPMENT					
Instrument/Make/Model	Analytical Principle		Last Multipoint Calibration		
SO2-M - NICOLET 6700 AHR0600411	FTIR		Apr 12, 2018		

Triad Data Available Upon Request



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CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Customer: ECO SERVICES
Part Number: E02NI99E15A3823
Cylinder Number: CC146576
Laboratory: 124 - Pasadena (SG06) - TX
PGVP Number: A32018
Gas Code: SO2,BALN

Reference Number: 163-401184005-1
Cylinder Volume: 144.4 Cubic Feet
Cylinder Pressure: 2015 PSIG
Valve Outlet: 660
Certification Date: Apr 30, 2018

Expiration Date: Apr 30, 2026

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
SULFUR DIOXIDE	275.0 PPM	277.0 PPM	G1	+/- 1.1% NIST Traceable	04/23/2018, 04/30/2018
NITROGEN	Balance				
CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	150606	CC450512	248.1 PPM SULFUR DIOXIDE/NITROGEN	+/-0.60%	Dec 17, 2020
ANALYTICAL EQUIPMENT					
Instrument/Make/Model	Analytical Principle			Last Multipoint Calibration	
SO2-L - (2) NICOLET 6700 AHR0600412	FTIR			Apr 25, 2018	

Triad Data Available Upon Request



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ECOSERVICES

Eco Services - Houston

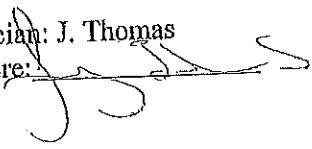
Quarterly Cylinder Gas Audit Checklist U8 Stack SO2 Analyzer

Date: 5/25/2018

Time: 9:00AM

Technician: J. Thomas

Serial Number: VE-920-8700-2

Signature: 

High Range

Cylinder ID number	ALM041526		ALM004868			
Date of Certification	1/16/2012		12/21/2016			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Pro. 1		EPA Pro. 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	909	2001	909	2001	909	2001
CEM Response value C_m (ppm)	889	1979	904	1991	907	1996
Accuracy A (% or ppm)	-2.200%	-1.099%	-0.550%	0.500%	-0.220%	0.250%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$



Airgas Specialty Gases
Airgas USA, LLC
9810 BAY AREA BLVD
Pasadena, TX 77507
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: **CERTIFIED STANDARD-SPEC**

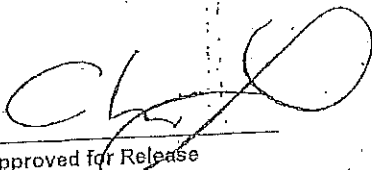
Customer:	SOLVAY USA INC - STOREROOM	Reference Number:	163-400829222-1
Part Number:	X02NI89C15A06L5	Cylinder Volume:	144.4 CF
Cylinder Number:	ALM041526	Cylinder Pressure:	2015 PSIG
Laboratory:	124 - Pasadena (SG06) - TX	Valve Outlet:	660
Analysis Date:	Jan 16, 2017		
Lot Number:	163-400829222-1		
	Expiration Date: Jan 16, 2020		

Product composition verified by direct comparison to calibration standards traceable to N.I.S.T. weights and/or N.I.S.T. Gas Mixture reference materials.

ANALYTICAL RESULTS

Component	Req Conc	Actual Concentration (Mole %)	Analytical Uncertainty
SULFUR DIOXIDE	908.0 PPM	909.0 PPM	+/- 2%
NITROGEN	Balance		




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CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number:	E02NI99E15A01H5	Reference Number:	163-400807728-1
Cylinder Number:	ALM004868	Cylinder Volume:	144.5 CF
Laboratory:	124 - Pasadena (SG06) - TX	Cylinder Pressure:	2015 PSIG
PGVP Number:	A32016	Valve Outlet:	660
Gas Code:	SO ₂ ,BALN	Certification Date:	Dec 21, 2016

Expiration Date: Dec 21, 2024

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
SULFUR DIOXIDE	1990 PPM	2001 PPM	G1	+/- 0.6% NIST Traceable	12/14/2016, 12/21/2016
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	120105	KAL003384	2502 PPM SULFUR DIOXIDE/NITROGEN	+/-0.60%	Jun 04, 2019

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multi-point Calibration
SO2-H - NIGOLET 6700 AHR0600411	FTIR	Nov 28, 2016

Triad Data Available Upon Request



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Eco Services Operations Corp.
Houston Plant

Data Assessment Reports
40 CFR Part 60 Appendix F
Procedure 1, Section 7

Unit #8

Stack O₂ Analyzer

1st Quarter 2018 - RATA

**RELATIVE ACCURACY TEST AUDIT REPORT
ECO SERVICES OPERATIONS CORP.
SULFURIC ACID UNIT NO. 8
HOUSTON, TEXAS
TEST DATE: 14 MARCH 2018
RN 100220581/CN 605004464
PERMIT NO. 19282**

Prepared for:

ECO SERVICES OPERATIONS CORP.
8715 Manchester Street
Houston, TX 77012

Prepared by:

WESTON SOLUTIONS, INC.
1400 Weston Way
West Chester, Pennsylvania 19380

April 2018

W.O. No. 15364.002.006

1. TEST PROGRAM SUMMARY

1.1 INTRODUCTION

The Eco Services Operations Corp. (Eco Services) Houston, TX facility is required to perform annual continuous emissions monitoring system (CEMS) Relative Accuracy Test Audits (RATAs) on its Sulfuric Acid Unit No. 8 (Unit 8) scrubber stack. This report provides a detailed description of the monitoring procedures that were used to demonstrate compliance for the sulfur dioxide (SO₂) and oxygen (O₂) CEMS.

Section 1 provides a summary of the overall test program and test parameters. Section 2 provides a summary of the Relative Accuracy Test Audit (RATA) results for each CEMS tested. A description of process operations, test locations, and sampling procedures are provided in Sections 3 through 5, respectively.

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1.2 SAMPLE PROGRAM MATRIX

Table 1-1 provides a summary of test parameters and test procedures. All CEMS RATA testing was performed on 14 March 2018.

Table 1-1

Sample Program Matrix

Sample Parameter	Sample Location	Test Method	Number of Tests	Comments
Sulfur Dioxide	Stack CEMS	EPA Method 6C	11	ppmv and % relative accuracy
Oxygen	Stack CEMS	EPA Method 3A	11	% O ₂ and % difference

2. RESULTS AND DISCUSSION

The CEMS certification results are shown in Table 2-1. The test results for relative accuracy met the performance specification criteria for each CEMS tested. Eleven reference method test runs were conducted at the stack CEMS location. The relative accuracy was based upon the best nine of the eleven runs. Run No. 1 was not used in the RATA calculations due to a gas conditioner failure in the Weston CEM system. All eleven RATA test runs are reported in the appendices.

Appendix B provides detailed summaries of the relative accuracy and performance specification testing.

Table 2-1
Summary of CEMS Performance Specification Test Results
RN 100220581/CN 605004464, Permit No. 19282

Stack Analyzers	Relative Accuracy	
	Performance Required (%)	Performance Demonstrated (%)
SO ₂	≤ 20	4.7
O ₂	≤ 1	0.01

3. DESCRIPTION OF PROCESS OPERATIONS

3.1 DESCRIPTION OF SULFURIC ACID UNIT NO. 8

The Eco Services Sulfuric Acid Unit No. 8 is a virgin sulfuric acid manufacturing unit. In the virgin sulfuric acid process, molten sulfur is sprayed into the furnace and burned at a high temperature with excess air to produce sulfur dioxide (SO_2); the SO_2 is cooled in a waste heat boiler. Gaseous SO_2 is reacted with air in a catalytic converter to produce sulfur trioxide (SO_3); between the first two stages of the converter, exothermically generated heat is removed by another waste heat boiler. The SO_3 is absorbed in strong acid in an absorbing tower to produce high-concentration sulfuric acid. Exhaust gas leaves the absorbing tower passing through an SO_2 scrubber before exiting from the stack.

4. SULFUR DIOXIDE CONTINUOUS EMISSIONS MONITORS (CEMS), LOCATIONS AND SPECIFICATIONS

Eco Services operates CEMS to measure SO₂ and O₂ concentrations at the scrubber stack. The CEMS specifications are:

Location	Manufacturer	Serial Number	Range
Stack SO ₂	Ametek 920	VE-920-8700-2	0-5000 ppm SO ₂
Stack O ₂	Ametek 920	VE-920-8700-2	0-25% O ₂



Eco Services Operations Corp.
Houston Plant

Data Assessment Reports
40 CFR Part 60 Appendix F
Procedure 1, Section 7

Unit #8

Stack O₂ Analyzer

2nd Quarter 2018 - CGA

ECOSERVICES

Eco Services - Houston


Quarterly Cylinder Gas Audit Checklist U8 Stack O₂ Analyzer

Date: 5/25/2018

Time: 9:00AM

Technician: J. Thomas

Serial Number: VE-920-8700-2

Signature: 

Cylinder ID number	CC242908		DT0005743			
Date of Certification	8/30/2016		6/19/2017			
Type of certification (e.g. EPA Protocol 1 or CRM).	EPA Pro. 1		EPA Pro. 1			
	Trial 1		Trial 2		Trial 3	
	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2	Audit Point 1	Audit Point 2
Certified audit value C_a (ppm)	5.00	15.01	5.00	15.01	5.00	15.01
CEM Response value C_m (ppm)	4.98	15.20	5.02	15.20	5.01	15.20
Accuracy A (% or ppm)	-0.400%	1.266%	0.400%	1.266%	0.200%	1.266%

where $A = \frac{(C_m - C_a)}{C_a} \times 100$

COMPLIANCE CLASS

Guaranteed +/- 2% Accuracy

9810 Bay Area Blvd., Pasadena, TX 77507

Phone: 281-474-5800

Fax: 281-474-5950

CERTIFICATE OF ACCURACY : EPA Protocol Gas

Customer:
SOLVAY USA INC
SOLVAY USA INC - STOREROOM
8515 Manchester St
Houston, TX 77012-2142
US

Assay Laboratory - PGVP Vendor ID: A32016
Air Liquide America Specialty Gases LLC
9810 Bay Area Blvd.
Pasadena, TX 77507

Lot No: 554861
P.O. No.: 4502361890
Folio #: 5% O2/N2
Sales Order #: 5168220

ANALYTICAL INFORMATION

Gas Type : O2,BALN

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G -1.
EPA/600/R-12/531; May 2012. Do not use this standard if pressure is less than 100 psig.

Cylinder Number: CC242908

Certification Date: 30Aug2016

Expiration Date: 31Aug2024

Cylinder Pressure: 2000 PSIG

Lot No: 554861

Component Name	Concentration	Accuracy (Absolute / Relative)			
	(Mole)				
OXYGEN	5.00 %	0.03	%	/	0.6 %
NITROGEN	BALANCE				

TRACEABILITY

Analytical TraceabilityReference Standard

<u>Component</u>	<u>Concentration</u>	<u>Uncertainty</u>	<u>Cylinder</u>	<u>Type</u>	<u>Exp. Date</u>
OXYGEN	20.8900 %	0.11 %	K014168	NTRM 2659	27 Jun 2022

ANALYTICAL METHOD

1st Analysis: 08/30/2016

<u>COMPONENT</u>	<u>INSTRUMENT</u>	<u>ANALYTICAL PRINCIPLE</u>	<u>CALIBRATED</u>	<u>CONCENTRATION</u>
OXYGEN	SIEMENS OXYMAT DO 550 PM	Paramagnetic	08/08/2016	5.00 %

APPROVED BY:

David Kelly

DATE: 30Aug2016



Airgas USA, LLC
9810 BAY AREA BLVD
Pasadena, TX 77507
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Customer: ECO SERVICES
Part Number: E02NI86E15A3432
Cylinder Number: DT0005743
Laboratory: 124 - Pasadena (SG06) - TX
PGVP Number: A32017
Gas Code: O2,BALN

Reference Number: 163-400931411-1
Cylinder Volume: 145.7 CF
Cylinder Pressure: 2015 PSIG
Valve Outlet: 590
Certification Date: Jun 19, 2017

Expiration Date: Jun 19, 2025


Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
OXYGEN	15.00 %	15.01 %	G1	+/- 1.0% NIST Traceable	06/19/2017
NITROGEN	Balance				
CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	103009	K021566	20.89 % OXYGEN/NITROGEN	+/-0.63%	Jun 27, 2022
ANALYTICAL EQUIPMENT					
Instrument/Make/Model		Analytical Principle		Last Multipoint Calibration	
O2-SIEMENS OXYMAT 6 DD550		PARAMAGNETIC		Jun 06, 2017	

Triad Data Available Upon Request




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